AMERICAN AGRICULTURIST,

FOR THE

Farm, Garden, and Household.

"AGRICULTURE IS THE MOST HEALTHFUL, MOST USEFUL, AND MOST NOBLE EMPLOYMENT OF MAN."—WASHINGTON.

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May

"The most unfurnished with the means of life,
And they that never pass their brick wall bounds,
To range the fields, and treat their lungs with air,
Yet feel the burning instinct."—

The passion for rural life comes as near to being universal, as any sentiment that rules the human heart. It is universal, notwithstanding the very large population congregated in cities, and that never expect to live elsewhere. The poor and thriftless live there not as a matter of choice, but of necessity. They find themselves in the city without any volition of their own, and they have not force of character enough to get out into the country, where land is cheap, and thus strike for independence. If they labor at all, they are accustomed to labor for others, to spend as fast as they earn, and to suffer when they can find no employment. They have no faculty to set themselves at work, and have never tried to make money earn money by trade, or mechanical employments. With all their longings for fresh air, and sunlight, they expect to live and die in the miserable tenements poverty compels them to occupy. The laboring thriving class in the cities, mechanics, clerks, and small tradesmen, have visions of rural bliss, which they expect to realize, but they are so far in the future that they have not yet taken definite form. They do not earn enough to admit of their living in the country while they do business in the city, or their business does not admit of such an arrangement. Country life is an expensive luxury, in which they hope they shall one day be able to indulge. Multitudes who have attained this felicity, do not know exactly how to afford it. The rent is cheaper, but the rides they find cost quite as much as in the city, and the markets are as dear. Vegetables and fruits do not come so early, and they are generally sold higher than in the city. Country life is very delightful, but it uses up a salary of $2,000 just as effectually as life in the city. The children enjoy it, are fat and happy, and are learning a multitude of clever things, that they could not know in the city; the wife is pleased, the society is good, and the schools are as a general thing, quite as good as in the city; but it all costs too much—ii can't be afforded.

"How to make rural life pay?" that is the question with all classes who ever expect to enjoy a home of their own in the country. There can be no doubt that multitudes, perhaps a majority who go into the country spend from a quarter to a third more than they need to, because they do not avail themselves of the advantages of the country. The theory of living is different in the county. Here a man produces every thing he can economically. In the city he buys everything, paying for it with his skill, labor, or capital, sold in the market. The citizen has no time to study the art of "making one hand wash the other." In the country, this is the great secret of economical living. You go into the country to have room, a house, and a few acres of land, delightful rides over the country with wife and children, to entertain your cousins and family friends with strawberries and cream, fresh laid eggs, and broiled chickens, in their season. Now if you buy all these nice things at your rural home, you will find the bills quite as large as in the city, and possibly larger. It is the easiest thing in the world for a family to run up a bill of three or four hundred dollars at the village stable, and then feel that they have not had half riding enough; two hundred dollars at the butcher's, feeling that they have had to stint themselves in poultry; fifty dollars with the milk man, with but half a supply of milk, and no cream at all; four hundred dollars at the grocer's, with eggs only once a week, and lean pickings at dessert.

Now we shall manage these things very much more economically, if we adapt ourselves to the conditions of rural life. You have two objects in view in a rural home, economy, and the better education of your children, meaning by that, what they get outside of the schools. It is worth a good deal to a family of children, to have them familiar with all the details of country life, the care of domestic animals, the management of a flower and vegetable garden, familiar with the trees of the wood, and plants of the field. Things move in a circle in such a home, and every link in the chain must be complete to make the rural home a paying concern. If you have land it must be worked to make it bear crops. To do this economically, you must have labor and manure. To have these in the most economical form, you must keep a man, and domestic animals. You have to pay out money for your help, and for your provender, but you get for it cheap rides, and all you want, cheap eggs, poultry, milk, cream, cheap fruits and vegetables, and the rural schooling for the children, which is a matter of prime importance.

Your man will cost you not far from $120 a year and his board, the keeping of the family horse, with the interest of money invested, and the wear and tear of vehicles, harnesses, etc., about $100, and the cow from $40 to $75, according to size, skill in management, and other considerations. You will want two pigs and thirty hens to complete the circle. These gather up the fragments, and turn the last particle of refuse matter to profitable account.

You want Patrick the year round, to attend to the horse and the cow, and with a little management, he need not have an idle hour. In the Summer he takes care of the garden, teaches the boys to hoe and spade, to harness the horse, and ride him, to hunt hen's nests, and feed the chickens. In the Winter, when the horse is not in demand for rides, he is busy drawing muck and manure. In such an establishment 40 or 50 cords of manure may be made, which will keep the land in a high state of productiveness. Patrick pays his way in garden products, a full supply for the family, with a small surplus for the village market, and a few hundred bushels of beets and carrots for the cow and horse. The horse pays his way in drives, and in aiding Patrick in his winter work. The cow pays her way in milk and cream, and if a very good one, in butter for three months in the year. The skim-milk goes to the pigs, and to mixing meal for the hens. The market value of her products will be from $50 to $100, according to the excellence of the animal, amount of feed, etc. The hens will pay their way in eggs and poultry. We have kept accounts for several years, and found the profits to average about $1 for each fowl kept through the year. The expense of keeping where all the food is purchased, is also about $1 each. The pigs are economical as coworkers with Patrick, in manufacturing fertilizers, and for furnishing about 600 pounds of pork and hams, of much better quality than you can buy in the market. There is nothing like the pork packed in your own cellar, for the weekly dish of baked beans, and that other dish known in its glory only in the country, succotash. There are no hams like those cured after your wife's recipe, as good a year old as when first cured, but always failing to keep a year, for the best of all reasons—they are eaten.

With us, rural life pays, and we can readily see that others can make it pay very much better than we do. But the art of living in the country, and indeed of living at all has always to be learned, and it is quite easy to see that the learning may be somewhat expensive. We offer these brief hints for those who are taking their first lessons this Spring, assuring them that with economy it will pay, and warning them not to anticipate too much the first season.

Calendar of Operations for May, 1862.

[A glance over notes like the following will generally call to mind some piece of work that would otherwise be forgotten or neglected. The remarks are more especially adapted to places between 38° to 45°; but will be equally applicable further North and South, by allowing for latitude.]

Farm.

How to economise time and labor and to accomplish most during the present month, is the farmer's study. Many a farmer undertakes to do so much work himself that he breaks down under the pressure, while he should have spent part of his time in planning to make work go smoothly, to have no hurrying, no work to be done over again, and to have no body on the farm who interrupts the work of others, or is out of the way when wanted, or shirking his share of the tough jobs, and looking out for easy ones. The farmers of our country should remember that all prosperity, especially in this country, is dependent upon the products of the soil, and so use the whole fertility of the soil and the manure-heap to the best advantage, and with confidence in Him who giveth rain in due season, and ordereth the seed time and the harvest.

Beans will do pretty well on poor soils, but a great deal better on good. They run to tops if the ground has too much fresh manure, and are an excellent crop for clearing land of weeds. They are always marketable, valuable for home use, and for feeding to sheep. Plant white bush varieties in drills 2½ feet apart. See article on p. 142.

Bees—A moderate apiary can be easily attended to with little expense and trouble, and with great profit. See directions given under "Apiary," on a subsequent page.

Birds—Spare them all; put up bird boxes. More than one or two compartments are undesirable. Kill cats that kill birds; allow no guns fired on or near the premises.

Bones—Collect from far and near with jealous care; pound them up or put them in with the horse manure.

Broom Corn—Plant late in the month, on good corn land in hills, 3 feet each way, or in drills 4 feet apart, thinning subsequently to 6 inches apart in the rows.

Buildings—Paint before hot weather comes on, if at all this season. Remove all litter from unused stalls and the bottom of bays, before it becomes a harbor for rats and mice and insects, which soon take possession when the premises are left undisturbed.

Calves—For weaning see Calendar for April; feed sweet hay after they begin to graze; castrate at 4 weeks old.

Carrots may still be sown; the earlier the better.

Cattle—Continue to fodder until there is abundance of grass. Keeping them a week out of the pasture now will be of great service to it before the end of the Summer. They will relish a little hay at night even after turned to pasture. Keep up the flow of milk by feeding cows with wet bran, shorts, and roots if any remain, until the pastures are in full growth. Feed grain to working cattle according to the severity of their labors. Potatoes or other roots once or twice a week will keep them in good, healthy working order.

Cranberries—This is the best month to set cranberries on wet land. Obtain good healthy plants from the swamp and plant them on skinned and burnt swamp land or on light moist upland, and keep clean.

Cellars—When the cellars are empty, clean them out in every nook and corner, and whitewash throughout, and stop rat holes with cement and broken glass.

Clover—Where winter grain is thin and backward from any cause, clover and grass seed will catch if sown early.

Corn—Prepare the soil in *dry* weather early in the month, never work the ground when it is wet. The old rule of the Indians was, to plant when oak leaves are as large as a mouse's ear. If heavy greensward be broken up this Spring, do not cross-plow, and be careful not to disturb the sods in harrowing and marking out the ground. The fermenting sods will afford warmth and nutriment. Examine carefully and reject all imperfect seed. If wet and dried off with lime, smutting is prevented. See p. 142.

Dairy—The labors of the dairy are commonly more burdensome this month than any other. Plenty of rich milk, with good help, makes the work light.

Draining—Mark spots that need draining, and be prepared to put in the "crockery" or stones next Fall in good earnest; and improve drouths, at any season, to drain low swampy land.

Flax and Hemp—Flax culture promises to become more remunerative in future, from recent improvements in preparing the fiber. Sow this and Hemp early.

Fences—Keep all in repair, particularly boundary and road fences, and around pasture lots where young cattle are confined. Good fences make quiet cattle. If they once become unruly, no ordinary fence will restrain them.

Grain Fields—A top dressing of plaster, nitrate of soda, or guano will often prove beneficial on both Winter and Spring grain. Guano, lime, or wood ashes, sown liberally before the seed is covered, will benefit heavy soils. Keep all stock from grain fields, and pull out weeds as soon as plainly visible before the grain is too large.

Grass Seed—May be still sown upon grain fields not already seeded, and on poor meadows. Use plenty of seed.

Hedge Rows thrive and spread by being let alone. Tear them out by the roots, not only along the fences, but by the roadsides to prevent further encroachment. If time can not be taken for this, turn a flock of sheep upon them to eat off the young sprouts as they appear, which will destroy some, and keep all in check.

Horses—Need, to keep them in good condition during Spring work, generous feed and thorough grooming. Collars, cart, and harness saddles should fit perfectly, and these are much better hard than soft. Soft pads induce sweating, and galls, if the skin be broken. A piece of hard leather, cut to fit the neck and shoulders under the collar, is a great relief to a tender skinned horse. Sponge the heads, shoulders and legs night and morning.

Horse-hoes—In all cases where hand hoeing can be dispensed with, and the work done by horse-power, do so. The tillage is commonly much more thorough, because oftener repeated and done at so much less expense.

Lime—Always apply it on land after plowing deeper than before, and upon the surface, for it works down. Keep a supply on hand for composting with weeds, sods, etc., 30 bushels to the acre, after plowing in other manure, is an excellent preparation for corn.

Lucerne—This clover rarely succeeds north of latitude 41°. It requires deep soil with open subsoil, on which it thrives year after year without renewal, and furnishes valuable feed, particularly for soiling, as it can be cut several times in a season. Use 10 to 12 quarts per acre, and sow early, best in drills 2 feet apart, and keep clean.

Mangel Wurtzel—A most valuable root for stock. Sow first to middle of May, on good strong deeply tilled land, 4 inches apart in rows 2 feet apart, bury the seed an inch deep, one seed in a place, if you can trust the seed; where seed fails, fill out by transplanting.

Manures—Corn is a gross feeder, and should be well supplied with all that can be profitably used. The effects of heavy manuring on hoed crops will be visible years after, in the oats, winter grain, and grass which follow. Buy manure only as a last resort, after all available supplies on the farm are exhausted. Bone dust, and Peruvian guano, where a good article can be obtained, cotton-seed oil-cake, castor pomace, and beef scraps, (the first two ready for immediate application, the rest requiring composting a few days with soil,) may often be bought and used to advantage. For grass or grain fields the Peruvian guano, nitrate of soda, or sulphate of ammonia if obtainable, applied in solution, are best. See article on Concentrated Manures, page 138.

Mowings—Allow no grazing in Spring, top-dress with fine compost before the grass has advanced much, or apply guano, ashes, or plaster, early this month if needed. Keep the wash channels open from the road, and arrange them to distribute the water over a wide space. See p. 138.

Oats—A crop may sometimes be got if sowed late, but they do not fill well. If the ground is in perfect order and you can put on nothing else conveniently, sow oats about the first of this month; but if rains come on, devote the land to corn or other crop. If your object is to seed down to grass, sow any time this month, and cut the oats for hay.

Onions—See Calendar of Operations for April.

Peas for feeding out may be sown early in the month. A low growing variety put in with oats, will be partially supported by the grain, and both will yield a good crop in a favorable season.

Parsneps—Afford a valuable feed for milch stock; should be sowed about the middle of May rather shallow, in drills 2 feet apart. Parsneps make lighter drafts upon the soil than any other root crop, except onions, but delight in a deeply worked light rich soil.

Plowing—Lay out long lands, and avoid curved furrows. Whenever practicable follow with the subsoil plow. There is no other good preparation for deepening the soil by subsequent plowings, and it is a great preventive of injury from drouth.

Potatoes—Plant early in drills 3 feet apart, use no heating manure, but well rotted compost, ashes, etc.

Poultry—If confined, keep up their laying by liberal feed of grain, boiled potatoes, and frequently some chopped meat, and grass or other green food. Allow them to leave their yard an hour or two before sundown, when they will not do much injury by scratching in the garden, etc. Hens with chicks should be confined in portable coops and chickens allowed to roam in the garden and fruit yard until they begin to scratch badly; they will destroy many insects. Feed young poultry with cracked corn instead of meal, increasing the size as they grow older, until they can manage whole corn. Milk curds are very wholesome food for them. Turkeys ought not to be set before this month, and when hatched the young birds must be housed in a dry shed, and not allowed to get wet by dew or rain for several days.

Provisions—Pork in barrels in the cellar, hams in the smoke-house, and other provisions, need looking after occasionally. Add salt to the brine if it needs it and see that it covers the meat. Hams sewed in thin muslin bags and whitewashed, will rarely be troubled by the fly. Keep them dry and cool.

Pumpkins—Cheese pumpkins are probably the best variety for cooking. Keep them separate from other vines of the same family. See article on page 142.

Root Crops—Carrots, see Calendar for April.—Ruta bagas, sow middle of June.—Parsneps, Mangels, and Sugar beets, see elsewhere in Calendar.

Sheep—Shear early without washing unless the sacrifice on the wool will be too great. Shear scabby sheep and dip in a strong decoction of tobacco, scrubbing them with a brush; watch the first symptoms of foot rot, and if it shows itself at all, after driving the sheep through shallow water or wet grass, to wash their feet, drive them all through a narrow passage in which a long trough is placed, holding a concentrated solution of blue vitriol, quite warm, in which they must take several steps. See article on page 137.

Soiling—Winter rye is earliest ready for the scythe, then oats and peas sown early and repeatedly, later clover, and for the Summer successive crops of corn sowed broad cast or in drills. The evergreen sweet corn is one of the best varieties for this purpose, though the common western or southern do well. Sorghum, Egyptian millet and common millet, and Hungarian grass, are all good summer soiling crops.

Sorghum—The uniformly good returns received from cultivation of this plant and manufacturing syrup and sugar when judiciously conducted, particularly at the West, stimulate its extended culture. Procure seed only from reliable sources—inferior sorts have caused much disappointment. Prepare the ground, plant and cultivate as for corn. See page 143.

Sugar Beets—Cultivate like mangel wurtzel in all respects, to which it is superior as food for milch cows.

Swine—Give to sows with litters plenty of nourishing food. The best pork is obtained from pigs kept fat and growing rapidly from first to last. If bran, shorts, or meal be given, mix with sour milk, or water, and allow it to ferment before feeding out. Cooked food is economical, a steaming apparatus should be attached to every establishment where many swine or other animals are fattened.

Tobacco—Weed plants in the seed bed, and water with liquid manure, dung-heap leaching diluted, sheep-dung water, or guano water. Follow directions in articles on Tobacco in this and other numbers.

Tools, machines, harness, etc. To keep all in perfect order is employment for the many rainy days common in this month. Examine well and procure the best mowing machine before the grass is suffering for want of cutting. A farmer should be acquainted with the merits of as many of the new implements as possible. Oil harnesses after they have been wet, and before they dry.

Orchard and Nursery.

Fruit trees should have been transplanted in this latitude, by the middle of April. At the north, late growing sorts may still be set out, and if neglected until now, they may be planted even now, in this latitude. Care will be necessary not to rub off the growing buds, and the roots must not be exposed to drying winds. Mulch the ground around late planted trees to guard against a drouth before the roots have taken hold of the soil. Cut back a good portion of the previous season's growth to infuse vigor in the remaining branches. A lagging tree either established or newly planted, will often push into a new and healthy growth by a severe heading back. See page 145.

Seedling stocks should all be planted out at the earliest moment, if still heeled in. Successful planting frequently depends very much upon the time of setting out. The soil is nearly always moist after the winter rains and snows, and if planted at that time the stocks or trees become established before the drouth which usually occurs the last of May, or first of June sets in.

May is emphatically the evergreen planting month, and the nurserymen are busy in taking up and sending away pines, spruces, hemlocks, firs, arbor vitæs, etc. So well do they understand the difficulty of successfully transplanting native evergreens from the forest, or open pasture even, with their coarse fiberless roots, that most of our common trees are now raised from seed in the nursery, or at least taken from the pasture while quite small and set in the nursery rows to form a mass of fibrous roots. They are frequently transplanted two or three times before they are finally sold, or in lieu of this they are dug about and the tap root cut, to induce side roots

and fibers. Even those grown with the most care, require more attention in their removal than deciduous trees. The roots should not be exposed to the sun or drying winds, and with some kinds, such as the broad leafed rhododendron and laurel, it is safest to remove the tree or shrub with a ball of earth attached. The same may be said of trees taken from the woods or pastures. Wet the ground thoroughly, dig carefully, and having secured all the roots possible, with the earth attached, slip a gunny bag or other stout cloth under the mass and tie the corners up about the trunk. Move it carefully and set at once, filling in a little peaty soil about the roots, if possible. If a favorite pasture or road-side tree is wanted in the lawn, commence upon it this Spring, digging about and severing some of the larger roots, but not too many of them. Fill in with fine soil and leave the tree to form new fibers during the season. The tree may be moved the succeeding Spring, or to ensure against the liability of failure, the remainder of the principal roots may be cut the following Spring, and left for another season's growth.

In exposed situations and especially in prairie regions, it is very advisable to shield the newly planted orchard from the prevailing winds. Plant a belt of evergreen and deciduous trees upon the north, east and west sides of the site intended for an orchard. Set the deciduous trees on the outside as a partial protection to the evergreens. In clearing up a forest, a belt of trees two or three rods in width, left to protect the orchard, will be very serviceable.

In the orchard there is little to do, if the directions given last month were fully carried out. A few grafts may still be put in the apple trees, provided the cions were cut in April or before, and have been well kept. Remove all brush, loose stones, and other rubbish from the orchard and if the ground has been a long time in sod turn it over lightly, previously adding manure. The only pruning now admissable is to remove decayed branches, and small shoots, thinning and heading back with the pruning knife.

Insects will begin to show themselves this month. Commence a vigorous assault upon them at once, before they have time to increase in numbers. A little work in the apple orchard will destroy many caterpillars' nests. Wash trunks of small trees with strong soap suds or potash water to remove scale. Give cherry and pear trees a sprinkling of oil soap solution, towards the close of the month, to kill slugs. Examine trunks of trees for borers.

Seedlings budded last season should be examined, and all shoots starting out about the bud rubbed off. Cut the stock to within two inches of the bud, unless already done.

Weeds will soon make their appearance in the nursery if not kept in check. The plow or horse-hoe will do most of the work, but the hand-hoe will also be needed to remove weeds in the rows. Use a short wiffletree, and pad the ends to prevent barking the trees.

Kitchen and Fruit Garden.

During last month most of the preparatory work of draining, manuring, and trenching, should have been done, many seeds sown, and some already beginning now to appear above ground. It is easy by a little extra care in protecting tender plants, as beans, melons, cucumbers, etc., to secure their ripening two or three weeks earlier than otherwise. Gauze covered frames will protect against quite severe frosts. Hand glasses are convenient and more effectual, but liable to scorch the plants. A pane of glass on four bricks answers a good purpose.—When rain has fallen after seeds have been sown, and the surface has dried rapidly, it will facilitate the appearance of the tender shoots, to gently loosen the crust above them, with care not to injure the growing plants. A loose surface is most favorable to growth under all circumstances, and the ground should be often stirred and the crust broken to admit air, warmth, and moisture to the soil below. Plan so as to have a succession of crops on the same soil—lettuce between the carrot and parsnep rows and among the hills of melons; cabbages among early potatoes, to stand after potatoes are dug, turnips after the peas and early beans, endives or celery to follow early crops in the same way.

Asparagus—Cut every shoot as it rises to sufficient hight for the table, by which means the season will be much prolonged. Be careful in cutting not to injure the young shoots beneath the surface.

Beans—Plant bush varieties early. The Princess, China and Valentine are earliest; Union, Rob Roy, Marrowfat, Large White Kidney, and Refugee, later. The Lima stands first among pole beans, but is late. The Dutch Caseknife, and Red Cranberry are earlier. Set poles before planting the hills, which should be raised an inch or two above the surrounding surface, and plant after the middle of the month. The Lima's are tenderest. Set the flat beans, eyes down, and shallow.

Beets for early use should now be up. They may still be sown. Sow for Summer, Early Bassano; for Winter use, Long Blood, or Blood Turnip, sowing in deep, mellow soil, in shallow drills, eighteen inches apart.

Borecole and Broccoli—Sow for late crops at any time after the middle of the month, and transplant ready grown plants to the open ground from the hot-beds.

Cabbage and Cauliflower—Sow for late use, and transplant from the hot-bed into rich mellow ground. Examine about the roots for the cut worm. Hoe former plantings frequently, in the morning when the dew is on.

Carrots may still be sown, though it should have been done earlier. See April Calendar.

Celery—Sow for main crop as directed last month.

Cistern—For large gardens, a capacious cistern to be filled from the roofs of adjacent buildings, is a great convenience. During drouth, a hose from a hydropult or garden engine may be introduced, and a thorough watering be given with little trouble.

Cold Frames—Remove any remaining plants as soon as there is no danger from frosts, and store the frames for another season. An occasional coat of paint and care in handling, will preserve them many years.

Corn—For family use plant sweet varieties at two or three different times during this month, and as many next, giving to each about equal space. For market plant once early in this month or in April even, and after the middle of May, make a planting once a week until the 4th of July. Darling's early sweet is a good variety, and the Evergreen sweet, a large growing late kind, but very good table corn. Some of the small eared New-England varieties are sweetest. Plant small varieties in north-and-south drills, 3½ feet apart, 3 kernels to the foot.

Cucumbers—Transplant those started in the house as directed last month. Plant seeds for a succeeding crop. Our practice is to make large hills and put in, at intervals of a few days, several rows of seed around the first planting, to attract insects which may escape other preventives. Superfluous plants are removed when the danger is over. One of the best preventives is cotton batting, a thin layer spread over the plants and pegged down.

Egg Plants—Transplant from the hot-bed into ground well enriched with warm fermenting manure, when the weather is warm and settled.

Fruit Trees—The main fruit yard should be separate from the kitchen garden, but dwarfs do well in it where their shade will fall on walks, or where it will do no harm. Dwarf pears thrive in the soil of a well tilled kitchen garden. It is not too late to do a good deal of transplanting of fruit trees, grapes, etc., if the buds have not started, and the trees are in good condition.

Hot-Beds—Remove all plants from them, paint and put away sashes and frames for another season.

Insects—Many are already on the alert. Whale oil soap, guano water, and hen-manure solutions are not only offensive to them, but give vigor to plants to resist attacks Covering with gauze frames, is almost a certain preventive.

Kohl Rabi—Sow and cultivate like cabbage; plants may be placed somewhat nearer together.

Kale—Green curled kale and other varieties may be sowed at this season, and treated like late varieties of cabbage. See April *Agriculturist*.

Lettuce—Transplant from hot-beds, and provide for a succession among hills of vines, etc. Set it in unoccupied places. Frequent watering with liquid manure and often hoeing will bring it to perfection.

Liquid Manure Tank—Every kitchen garden should be provided with some convenience for making a solution of manurial substances. It should be near a supply of water, be sunk in the ground, and tightly covered. A barrel or half hogshead tub will do, but a tight box in which is a partition with holes at the bottom is better. Against the holes on one side is thrown a quantity of shavings kept in place by a few stones, then any kind of litter or manure. Upon this we may throw a few pounds of guano, or sheep, or hen manure, or sulphate of ammonia, and pouring on water it will percolate and come well strained through into the other side fit for use. It is most important that it be not applied too strong. Water at evening, not letting it touch the plants, unless they are infested with insects.

Manure—A supply for a large garden may be obtained by saving sink and chamber slops, and using the contents of the privy. Offensive substances are made inodorous by mixing with them plenty of muck, or by sprinkling liberally with sulphate of lime (plaster of Paris).

Melons—Musk, Canteloupe, Nutmeg, etc. Sow seeds as directed for cucumbers. The *seed* is worthless, and the flavor of the fruit injured, unless raised at a distance from other cucurbitous plants.

Nasturtiums—Sow where they will be shaded from the mid-day sun. They thrive best with plenty of moisture.

Okra—Sow in very rich soil, in shallow drills, 3 feet apart, and thin to a foot distant in the row.

Onions may still be sown. They do best several years on the same soil.

Peas—Sow for a succession of crops. The Champion of England variety is generally preferred for the main crop. A convenient method of supporting peas, is by means of stout cords stretched between stakes or posts at the ends of rows, supported in the middle if needed.

Peppers—Plant out from the hot-bed, eighteen inches apart, in rows two feet distant.

Potatoes—Plant at any time during the month, the earlier the better; late potatoes are of little use in the garden. The Dyckman, Ashleaf Kidney, Peach Blow, Wendell Seedling, and Dover, are excellent garden sorts. The last not early, but excellent. Hoe former plantings, and top-dress with ashes and plaster.

Pumpkins—Plant in hills eight feet apart, and at a distance from melons or squashes. Where different varieties of such vines are cultivated in the same enclosure, it is a good arrangement to surround each plot with several rows of peas, which will partially prevent their mixing.

Quinces—See article on page 145 of this number.

Radishes—Sow in vacant spaces, for a succession.

Rhubarb—Set roots or, if not supplied, sow seed. Hoe out all grass and weeds, and keep the surface loose. Pull leaves, removing only the stalks, and leaving the leaves for a mulch about the plants. Cut out the seed stalks as soon as they show themselves.

Salsafy—Sow on soil deeply worked, like carrots.

Seeds—Test before sowing largely. Set out roots or plants intended to furnish seeds for next year. Different varieties of the same species, as cabbages, turnips, etc., of various sorts, should be widely separated, to keep the seed pure. To get good squash or melon seed reserve spots in corn or potato fields far apart, for raising them.

Squashes—Treat like cucumbers and pumpkins.

Sweet Potatoes—Plant out when the weather is settled and warm, in deep, well pulverized soil, enriched with stable manure. Set plants from fifteen to eighteen inches apart in high ridges, or in hills, about three feet from center to center; set them obliquely and so that the stems of the lower leaves will be covered; they will then sprout again, if cut off by frost or worms.

Tomatoes—Transplant from the hot-bed into a well enriched sunny bed, 4 feet apart each way. A sandy soil is favorable. In setting the plants, place them a little deeper than they originally stood—they will throw out fibrous roots from the stem. Prepare a light inclined trellis to support the vines.

Turnips—Sow for Summer, hoe, weed, and thin others.

Winter Cherry (*Physalis*)—Plant out the same as tomatoes. Seed may still be sown, soaking it first.

Small Fruits.

Blackberries may be transplanted and succeed well any time before the buds swell for leafing out. Cut back well.

Cranberries—See note in Farm Calendar. They may be cultivated with good success in the garden.

Currants may be planted or moved, but at the sacrifice of the fruit if it be done after the buds have burst. Pruning to a single cane or stalk to each root, and this trained at an angle of 45°, and only very short spurs allowed to grow, is a system growing in favor.

Grape vines neglected in the proper season for pruning may be pruned as soon as the leaves appear, without danger of bleeding, and early in the month vines may be planted to good advantage, though better earlier.

Mulberry—This is suitable for an ornamental tree. Downing's everbearing is hardy and excellent.

Gooseberries—The Houghton does not mildew, and is therefore the best to plant. As soon as the leaves appear dust with sulphur.

Raspberries—Enrich the ground beneath and about them, by surface dressing. Cut out all feeble canes and winter-killed parts.

Strawberries—See notice of superior varieties offered as premiums. Set in good light, or well worked soil, water freely and frequently, giving a very little liquid manure in each watering. Bearing plants should be mulched with straw, tan-bark, lawn clippings, or saw-dust, to keep the berries out of the dirt. We prefer tan-bark.

Flower Garden and Lawn.

How apt are we all to regard as valuable and useful only, or chiefly, those things which minister to our bodily wants, or bring us some material profit. Why should the demands of the body and its comfort and enjoyment pull down the soul to its own gross level. Once supplied with food and clothing, let the mind have a free range, and the soul delight itself in beauty, and grow in the sunshine of nature, which is beautiful, often in proportion as it is of no other use.—If old beds are to be re-arranged, do it at once. In transplanting, disturb roots as little as possible. The frames, pits, houses and conservatories can be emptied in the course of the month, of all but stove plants. Most of them will do best, turned from the pots into the open border. Intersperse them among the bulbs, annuals

and late blooming perennials, where they will make an immediate show, and keep up a succession of bloom.

Amaryllis, one of the finest Autumn blooming bulbs, should be set early in a warm border.

Annuals—Sow in fine, well enriched warm soil. It is essential that a good variety of fine blooming annuals should now be put in, to keep up a show of flowers late in the season, after most of the perennials have cast their blossoms. Most of those sown in the houses to foward their growth, may now be transplanted to the open ground.

Bedding plants, as verbenas, petunias, salvias, heliotropes, Japan pinks, lantanas, pelargoniums, and others, may be readily obtained of the gardeners. The tender ones should be set out as soon as danger from frost is past. It is best to set each variety by itself, more or less.

Asters—Sow in open ground early, in various places, where they are to remain; later in the month transplant from hot-bed or frames. A few may still be started in boxes, if the ground be not ready—to transplant afterwards.

Biennials and Perennials—When it is desirable to increase the stock, remove a portion, and leave the remainder undisturbed.

Box Edging—Keep close clipped and low; reset if necessary as directed in April Calendar; renew weak or wintered-killed spots.

Bulbs—Keep well supported, and stretch a light awning over the choicest, to lengthen the period of bloom, removing at night and during cloudy weather. Set Autumn blooming varieties, as amaryllis, gladiolus, tuberose, lilies of various kinds, etc.

Carnations and Pinks may now be set out already in bloom. Tie to neat stakes. Divide old roots, and make layers to form new plants.

Cypress Vine, Morning Glory, and other annual climbers may be sown immediately and trained to strings around a central pole. Unsightly buildings, rough fences, etc., can be almost hidden beneath a mass of bloom, when covered with these climbers. Cypress vine seeds vegetate much more freely when soaked in tepid water for 12 hours before sowing.

Dahlias—Sprout them in boxes of earth, or by burying in a warm border previous to planting the last of May.

Evergreens—Delay planting until the last of the month after the trees have begun to grow, except arbor vitæ and Norway spruce. Keep the roots from the sun. Hollies, rhododendrons, and other broad leaved evergreens, do better when removed with a ball of earth attached.

Frames and Pits—Remove any remaining plants.

Flowering Shrubs—See Calendar for last month. Some are already in bloom, or have cast their flowers; the later kinds may still be planted.

Gladiolus—Set the bulbs in a warm sunny place. Some of the newer varieties are very pretty.

Grass—Keep well trimmed and close clipped along the edges, using a line and sharp spade, or edging knife. New turfing may also be laid; keep well watered until rooted.

Gravel Walks should be kept free from weeds with the shuffle-hoe, and be well covered with clean, coarse gravel, and rolled.

Fancy Gourds—Sow early, and train upon fences, trellises, or old trees.

Hedges—Complete setting deciduous, and arbor vitæ, early, other evergreens later. Clip any not attended to last month.

Honeysuckles, Wistarias, Ivy, Ampelopsis, Bignonias, Clematis and other perennial climbers—Set at once, if neglected until now. Arrange on trellises or lattice work. Sow seeds and make layers.

Insects—It will be much easier to keep them in check if they are combated upon their first approach.

Lawns will need mowing, and should be cut frequently and evenly. A good, cheap, lawn mower is needed.

Lupins—Sow early and give plenty of room.

Mulching is beneficial to newly planted trees and shrubs. Lawn clippings are excellent.

Pruning—Prune with reference to habit and manner of blooming; the knife may be used freely at all seasons, if used with discretion. Shrubbery needs to be kept dense to look well. Evergreens should branch quite down to the ground. Their outer extremities may be cut back slightly, to make a dense growth.

Roses—Let the supply be large and varied, if space permit. The common June or garden roses must yield to remontants, teas, and bourbons. Tie up pillar and climbing sorts, layering the old wood. Turn those in pots into the open border.

Shade Trees—It is not too late to plant if they have not leafed out. Some will bear moving even then.

Trellises and Upright Frames—Set if loosened by frost, renew if decayed, before vines and climbers are put out.

Tuberoses—Plant bulbs not potted, early in very warm good soil. See description given last month.

Green and Hot-Houses.

As few plants are retained under glass as possible, all that will bear the exposure, as soon as they are sufficiently hardened by free ventilation, are removed to the open ground. There is little fear of frost after the middle of this month. Roses and bedding plants are turned out of their pots. Keep all growing plants well watered and syringed. Plant out fuchsias in partial shade.

Pelargoniums—Cut back severely, and set out the prunings in masses. Oleanders, Myrtles, Oranges and Lemons, may be sunk in their pots or tubs—examine for scale bugs.

Grapery and Orchard-House.

Give good ventilation; syringe foliage, walls, and ground, freely and often. Thin out fruit if it is too thick. Go through thoroughly pinching in shoots wherever needed. Grapes require especial attention; mingle sulphur in the water they are syringed with, and dust it upon both fruit and foliage. Abstain from syringing any fruit in bloom, and let bees have access if they will.

Apiary in May.

Prepared by M. Quinby—by request.

The weather during fruit blossoms, decides whether we have early or late swarms. Should the yield of honey be plentiful, *good* stocks will be prepared to throw off swarms the last of this month. But, should a scant supply be obtained through unfavorable weather, swarming would be put off indefinitely, and even second or third rate stocks may throw out the first swarms. It sometimes happens that strong colonies having a good supply of last year's honey, and gathering but little now, will consume it this month, rearing drones. They even make preparation for swarming—rearing queens so far as to seal them up. A dearth of honey nearly always occurs between fruit and clover blossoms. The drones are sacrificed to save the colony. The bees in such cases change their plans entirely. If they get honey almost immediately, it will take several weeks before they can again get into condition to swarm—providing another brood of drones and other preliminaries just lost. Stocks that were quite feeble in March, with light stores, that could not afford to rear a drone, and that used with economy what they had, will pass such season of scarcity without any suspension of breeding, and be ready for swarming first. This explains why poor stocks will occasionally turn out better than such as were best at beginning of Spring. Should a swarm issue during such a time of scarcity, it will need feeding, particularly if there should be cold wet weather. Some of the poorest colonies can not always be trusted to supply themselves at such times, and will need feeding also.

Swarming will not be general until white clover appears. Use for swarms no hives that have been recently painted. Have every thing in readiness for the swarms as they issue. When they have clustered, there should be no delay in getting them into the hive. The time lost in preparing a hive, and having the bees wait for it, often results in *their not* waiting. *Good luck* here, consists in getting all the swarm to enter the hive, carrying to the stand, shading from the hot sun, and raising the front side just a little, without delay.

Those who begin to rear Italian queens this month, will need a full colony of that kind. It will be hardly possible to procure a queen much before the first of June. A queen just introduced to a native colony, is just as good to breed queens from, as if she was in a hive of her own bees. To begin—after the preparations already suggested—the first thing, after a colony is sufficiently strong, is to introduce the frame with small frames into the center of the hive—described in Feb. *Agriculturist*—taking out an outside one, and moving the others outward to make room. The queen will soon deposit eggs in some of the small combs, when they are ready. Raise out the frame carefully—using smoke to keep the bees quiet—slip out one, put another in its place, and return to the hive. Fasten on the top of this with screws, or pieces of wire bent around a thin strip of wood projecting half an inch beyond the corner, by which to suspend it. Three such combs are needed, but only the middle one need have eggs. Have ready before hand about a quart of bees—in warm weather a less number will do—to introduce to this box, without a queen of course. Open a hole in the top of the box in which they are confined, and set the one with the comb properly adjusted over it in such a way that no bees will escape. Feed a little and keep shut up for two or three days. When bees can be procured at another yard a mile away, the shutting up is not important if set a little distance from any others. They usually construct three or four cells, and the first queen that matures will destroy all the others. To prevent this, about the tenth day take out the comb and cut off without injury all the queen cells but one; these may be given to other little colonies for maturing. The queen matures in twelve days after they are shut up, ordinarily, and will commence laying in eight more, when she may be introduced. It is found to be very hazardous to introduce an Italian queen to a colony of natives, sooner than a week after they have been deprived of their own. Let the stock be strong enough to divide, when half of the combs and bees may be put into an empty hive adding frames to fill each. Set two feet apart, each a foot from the old stand; the one that is like to get the most bees may be put further off. In a day or two, the half without a queen, will begin royal cells; and of course the other hive is the place to look for the old queen, which may be destroyed. In eight days look over the combs again minutely, and cut off *every queen cell*—success depends upon it. The queen now to be introduced, may be enclosed in a tumbler, with two or three bees as attendants, and secured with wire cloth. Remove the honey board—the board over the frames—and invert the tumbler directly on the frames where the bees are thickest; set over the cover two boxes, to keep them warm. In the course of twelve hours, the bees and queen will become sufficiently acquainted through the wire cloth to be allowed together. Take off the tumbler carefully without disturbing the bees, set on the cover again, when she will quietly go down into the hive, and commence depositing eggs at once. This is the whole process. The Italians seem to work more readily in this way than the natives. I think it quite probable that this mode of propagating queens artificially, will yet be generally adopted. The introduction of a mature fertile queen to a colony two weeks sooner than when they swarm naturally, is an advantage sufficient to pay for extra trouble. The time gained in breeding, is equivalent to a swarm.

Grape-Growers' Maxims.

BY A. S. FULLER.

1—Prepare ground in the Fall, plant in Spring.

2—Give the vine plenty of manure, old and well decomposed; for fresh manure excites growth, but does not mature it.

3—Luxuriant growth does not always ensure fruit.

4—Dig deep, but plant shallow.

5—Young vines produce beautiful fruit, but old vines produce the richest.

6—Prune in the Autumn to promote growth; but in the Spring to ensure fruitfulness.

7—Plant your vines before you put up trellises.

8—Vines, like soldiers, should have *good arms.*

9—Prune spurs to one well developed bud, for the nearer the old wood the higher flavored the fruit.

10—Those who prune long must soon climb.

11—Vine *leaves* love the sun; the *fruit*, the shade.

12—Every leaf has a bud at its base, and either a bunch of fruit or a tendril opposite to it.

13—A tendril is an abortive fruit bunch—a bunch of fruit a productive tendril.

14—A bunch of grapes without a healthy leaf opposite, is like a ship at sea without a rudder—it can't come to *port.*

15—Laterals* are like politicians; if not often checked they are the worst of thieves.

16—Good grapes are like gold; no one has enough.

17—The earliest grape will keep the longest; for that which is fully matured is easily preserved.

18—Grape eaters are long livers.

19—Hybrids are not always high-bred.

20—He who buys the *new* and *untried* varieties should remember that the seller's maxim is *Caveat emptor.*—Let the buyer look out for himself.

* Laterals are shoots which start from either side of the main bud, at the axil of every leaf; if they grow unchecked they destroy its vigor; if entirely removed, the bud itself shoots prematurely.

Training Tomatoes.—A correspondent writes to the *American Agriculturist*: It is poor policy to set them in rich soil; let it be of just moderate fertility. Give them the warmest part of the garden; set small pieces of bush around them until they have grown eighteen inches or so high, then drive in notched stakes along side of the rows, say about two feet high, and on these notches lay poles—bean poles will answer—on each side of the rows; as soon as the vines are high enough lay them on these poles, this will expose them to sun and air and keep the fruit clean. The tomato may be trained, also, like a grape vine, on a low trellis or sunny wall; the yield of fruit is enormous, and on a warm wall the first frost will do no real injury.

Containing a great variety of Items, including many good Hints and Suggestions which we give in small type and condensed form for want of space elsewhere.

The General Premiums Still Good. For want of room we omit the list of General Premiums. They can be found on pages 122 of last month, page 90 (March), and in full on page 27, (January). We invite all our friends to continue their kind efforts to promote the circulation of this journal.

Crop Reports—Blanks.—On or before April 23d, Blank Forms were mailed to all whose names and addresses had been received up to that date, and we are continuing to send these blanks to other names that come in from day to day. These blanks should be received by the first of May. If there are any failures or losses by mail, please inform us promptly. The sheets contain separate blank forms for five monthly reports, beginning with May 10, on which day the first report should be *mailed*, in order to be inserted in the June *Agriculturist*. We shall be glad to have many more names of those who will assist in this public enterprise, especially from localities in the great corn and grain growing regions of the middle and western States, not yet represented. We are thankful in behalf of the country, for the interest already manifested. In many places, Farmers' Societies, and Clubs, have taken hold of the matter with spirit, appointing competent reporters to receive the blanks, and promising constant co-operation on the part of the officers and members. In several instances the President or Secretary of a County Society has been appointed, and he in turn has chosen assistant reporters in each town in the county—a capital idea. We have devised a system of numbers, which will convey a great amount of information in regard to the breadth and condition of the crops, in a very small space. Our next paper will show the method and its results.

Interesting War Maps, are presented on pages 153, 156 and 157. We could hardly spare room for them, but in these times we cheerfully respond to the general wish of our readers, so fully expressed in letters.

Missing Seeds, etc.—The call for Seeds has been so unexpectedly and unprecedentedly great, that many kinds, though laid in largely, have run out entirely, and could not be replaced. The run upon particular kinds has been very great. Take No. 183, for example. We had all the seed from a quarter acre of our own production, and at first sent out good sized parcels; then the demand increased, and we lessened the amount of seed to each; then we bought all the extra seed we could, and yet run short. The same may be said of Nos. 168, 292, 207, 208, etc. Some parcels have doubtless been lost by mail—we hope not many, for they have cost us trouble and expense enough to have them all go safely. We have certainly spared no pains to do all we promised and more, and to satisfy every subscriber. See "Defective Seed Envelopes" in another column.

The Strawberry Premiums offered last month are still good, and will be up to May 10th. We limit the time, as it will not be absolutely safe to send plants by mail at a later date. We are now sending out many thousands of plants each week, but shall doubtless have enough for all who apply for the premiums during the time specified. Our plants are very fine; they were *grown* by A. S. Fuller, in his nursery grounds on Myrtle Avenue, Brooklyn, L. I., and he is so sure of their superior quality that he is quite willing to join us in guaranteeing their excellence.

A Strawberry Show is announced on page 160, to which attention is invited. The occasion will doubtless be one of much interest, and useful information will be brought out. All who have good strawberries to show, and those who like to see them, are invited.

See the good Advertisements, on pages 155, 158 and 159. They were necessarily divided by the maps, which could only be printed on one side of the sheet.

Central Park Conservatory.—We understand that the Central Park Commissioners have made an agreement with Parsons & Co., of Flushing, by which they secure to the City a constant exhibition of the finest exotic plants in a large show house, or conservatory, to be erected on the Park near Fifth Avenue, and in return for their expenditure for this purpose, and their annual payment of a specified sum to the Park, have granted them a license to sell cut flowers and plants in pots. The Conservatory will probably cost fifteen thousand dollars, and is to be built two stories high. The upper story will be on a level with and adjoining Fifth Avenue, and will be built on brick arches and iron beams. Its size will be 160 feet long, and 40 feet wide. This will be the principal show-room, and will be filled with the most beautiful flowering and foliage plants, growing in the soil, while the finest exotic vines will cover the roof and columns. The rooms below and on a level with the Park, will consist of a Camellia-house, 40 by 60 feet, a Fernery; 40 by 60 feet; and two large rooms 48 by 60 feet each, to be used as sales-rooms. Smaller rooms in the rear will be occupied for making bouquets, for offices, and for a horticultural library to which all visitors will have access. It is designed to have exhibitions of single classes of plants, as Geraniums, Fuchsias, etc., of which large quantities are to be grown at Flushing, or by other florists who incline to send good plants there for sale on commission. We look upon this enterprise with great interest because it will make our citizens familiar with the finest plants, and educate their taste. Florists generally will be benefitted also, as the improved taste will greatly increase the demand for flowers and plants. The Central Park Commissioners have doubtless done a good thing for the public.

Planting Strawberries.—To several inquirers. The best time to make new beds for fruiting, is in August and September, using the well rooted new plants from the runners of this year. If set early in Autumn they will bear well next season. Plants set out in the Spring get well established, and if on good, rich soil, send out abundant runners which take root at the joints, producing new shoots. If to be made the most of, put them at least two, or better three, feet apart; turn the runners so that they will not interfere; and when needed, fasten the joints loosely to the ground with a very small forked branch. Nearly or quite every joint so pinned down will take a root. A bit of earth, or a pebble will answer to hold the joints down.

Adirondac Grape—Correction.—In speaking of this grape, page 117, April *Agriculturist*, we said it was exhibited at Montreal, Canada, in *October*. The introducer, Mr. John W. Bailey, writes us that he showed it at Montreal on the 18th of September, *fully ripe*. He claims that it ripens four to five weeks earlier than the Isabella, and ten days before the Hartford Prolific. We know nothing as to its *quality*.

Royal Hort. Society (Eng.).—The great shows take place this year at "The Garden," South Kensington, London, on May 21st, June 11th, and July 2d. In October there is to be a show of fruits, roots, gourds and squashes, vegetables, and cereal grains, which is open to all countries. We hope that efficient means will be taken to make a show of American products in London. It may open an important market.

How Much Rain in a Year.—An interesting table prepared for the *Agriculturist* will be found on page 154. It will be seen that the fall of water, in the form of rain and melted snow, has for seven years past, averaged 50⅛ inches per year, or sufficient to cover the whole surface with water to a depth of over 4 feet. The least fall was in 1856, not quite 43 inches. The greatest fall was in 1858-9, being over 56 inches (56.16). The fall for the year ending March 1st, 1862, was nearly 56 inches (55.97). The mean fall for seven years by seasons was: Winter months 12.29 inches; Spring 13.16 inches; Summer, 12.87 inches; and Autumn, 12.18 inches—showing no great difference in the mean fall for the different seasons. The largest fall was in April, May, and June, 1857, being over 18 inches, (18.09)—an inch for every five days.

The "Cheap Watch" Humbug.—Messrs. "Bostwick, Tiffany & Co."—Just as the April *Agriculturist* went to press, we began to receive letters of inquiry and remittances of money, from $8 to $20 each, to be invested in watches offered wonderfully cheap by "Bostwick, Tiffany & Co., New York." On referring to the advertisement in the *Weekly Tribune*, we found that, under the above name, some party, (perhaps the "Sands of Life" man, or the Rev. Wilson, or one of that ilk,) had assumed, in part, the name of the old well-known dealers, Tiffany & Co., and with much pretence of hard times, offered watches at "ruinously low prices." The advertisement itself was sufficient evidence to us that it was a swindle. We first wrote a letter, in a friend's name, stating that we had $20 sent us to invest in a watch, and asked Messrs. "Bostwick, Tiffany & Co.," (so-called) *where* we should bring the money. The reply was, that all the watches were sold out, and their establishment was about being moved to Philadelphia, where any communication would reach them. We next called personally upon Mayor Opdyke, who promptly seconded our efforts to stop the swindle. He dispatched Capt. Silvey, of the Metropolitan Police, ordering him to arrest whoever should call at the Post Office for letters for "Bostwick, Tiffany & Co." The next day we received a note from the Mayor, stating that Capt. S. had arrested the swindler and found upon him $400. There being none of the actually swindled persons here to enter formal complaint, the villain could not be held, and is now doubtless engaged in some other scheme under another name. We returned all the money chancing to be entrusted to our care. As a single mail brought him $400, probably he collected thousands of dollars, and would have got many thousands more had we not stepped in to stop his career. MORAL—When anybody offers to sell you two dollars worth of silver or gold for one dollar of the same metal, set him down as a humbug, a thief in disguise.

Instruction about Fruits and their Management.—The best general work on this subject is doubtless "Downing's Fruits and Fruit Trees of America." It names all the best fruits and gives a description of each—figuring many of them—and gives ample directions for their culture. It contains 760 octavo pages and costs $1.75, sent post-paid by mail, or otherwise.

"Hints to Horse Keepers."—("J. W." New Haven, Conn.) This book is what its simple title purports, and a great deal more than one would suppose. Henry William Herbert (Frank Forrester), we may almost say, made a life study of horses, and this book is a compendium of much valuable experience, and most enlightened views. It is fully illustrated, contains 425 pages, and is emphatically a good *hand-book* for horse-men. (Price $1.25. The same if sent by mail post-paid.

Book on Gardening for Ladies and Beginners.—"Julia," Cook Co., Ill. We know of no book better adapted to a novice, than Mrs. Loudon's "Ladies' Companion in the Flower Garden," edited by A. J. Downing. It does not contain *all* the new plants and flowers, for it is several years old, but is full of correct and practical information. It is an octavo of 430 pages, the descriptive part double columned, and well illustrated. (Price sent by mail, $1.50.)

A Pleasant Fertilizer for Garden Plants.—Many persons, particularly ladies, dislike to use the ordinary fertilizers from the barn or poultry yard, on flowers and other house-plants. "One who knows" sends the following for the *Agriculturist*, which is good not only to stimulate house-plants, but for out-door plants of almost every kind. Dissolve ⅛ to ¼ ounce of sulphate of ammonia, (obtained cheaply at the druggists) in one gallon of water. Apply it only once a week, and then only to growing plants. It may be used with great benefit on beds of strawberries, on peas, on dwarf pears, grape vines, dahlias, and for all kinds of pot-plants. This mixture increases the size of the foliage of plants, and gives a dark, shining green color. The flowers also are improved in proportion. And, not least important, this fertilizer will do no harm.

Six Good Dwarf Pears.—A good judge, in Central New-York, recommends: Duchesse d' Angoulcme, Louise Bonne de Jersey, Beurre d' Amanlis, Urbaniste, Beurre Diel, and Vicar of Winkfield.

Defective Seed Envelopes.—As stated in the last *Agriculturist*, page 101, a large number of applications for seeds have been made, in which the subscribers failed to follow the directions given in connection with the list. This has been done accidentally, no doubt—perhaps carelessly in some cases—but that will not prevent their allotting the blame to us. Indeed, we have had a few severe letters from those whose envelopes are on hand, but too defective to be used. We have paid many dollars of postage on letters having the old stamps or none at all, while many subscribers have put on three cent stamps where one cent would have answered. We have on hand many of these defective envelopes. Here are a few which are without the P. O., or without the list of seeds desired—other envelopes lack any address, though they have the seed lists: *Vermont:* W. S. Grow. *Rhode Island:* A. Aldrich. *Connecticut:* W. A. Hyde. *Massachusetts:* G. H. Dyer, H. R. Storer, C. Gardiner, S. Green. *New York:* T. Pierson, L. M. Chambers, S. Fordham, J. A. Pain, F. W. Smith, L. Weirich, J. Tongue, G. Jarrold, A. E. Deyo, A. Matson, O. Reed, A. M. Hitchcock, S. F. Roberts. *New Jersey:* R. T. Abbott, C. W. Moore. *Pennsylvania:* J. Lewis, W. Richardson, G. Gelter, L. C. Troutman, W. House. D. Datweiler, N. Haughy, A. J. Watson, H. Broman. *Illinois:* P. Conner, H. Baurs, J. W. Coventry, V. E. Deyo, C. Seibel, G. J. Hughston. *Wisconsin:* H. B. Lee, E. Kendley. *Indiana:* T. B. Graham, R. E. Koffel, J. P. Clough, H. Matthews, I. Henley. *Ohio:* S. Phelps, A. Branden, D. Furnas, W. Negele, P. S. Bull, N. H. Townsend. *Iowa:* S. O. Crumb, J. M. Chapman, S. S. Eagan. *Michigan:* I. J. Carver, D. C. Higbee, L. E. Ferguson. *Kansas;* D. R. Bruen, S. Ogden, D. B. Overly, M. A. Bunch. *Minnesota:* J. V. Dugan. *Delaware:* W. C. Mitchell. *Maryland:* D. A. Price. No State or Post Office given: A. Weaver, J. B. Brooks, B. F. Rollins, B. F. Binns, U. S. Rector. Dr. Gilmore. Many others are otherwise defective. If the above will send in a list of ten to fifteen numbers to select from, with full address, we may yet be able to supply four or five parcels each.

Vitality of Seeds.—Nearly all seeds retain their vitality more than one year; some are good for twenty. But the old story of the mummy-wheat is beginning to be discredited. It depends very much on the way seeds are gathered and preserved. They should be collected just at the point of full ripeness, not after, then laid away to dry. At leisure, they may be rubbed out, sifted, and put away in paper bags, labelling them at the time. They should be kept in a dry place and at an even temperature. Before planting, throw your seeds into a dish of water; those which float are generally worthless—not always. A surer way is to try to sprout them in boxes of earth before planting. Those whose tested portions do not germinate may be thrown away.

Treatment of the Amaryllis.—"Reader," Hampden, Me. The Amaryllis requires a period of rest after blooming, or after the new growth which follows blooming. Set the pots in a dry portion of the house, and give very little water for 2 or 3 months.

Flowers and Ruta-Bagas.—"Jane." You mistake, if you think a man can not be interested in the useful and the beautiful at the same time. We hope your lover will have an eye to both. Look at the example of sturdy Wm. Cobbett, the author of the "American Gardener," who first introduced the ruta-baga turnip into this country, and cultivated it with great zeal and success. This plain man wrote thus: "For my part, as a thing to keep, not to sell, as a thing the possession of which is to give me pleasure, I hesitate not a moment to prefer a fine carnation plant to a gold watch set with diamonds." Please, Jane, don't sneer at plain men, again.

Propagating the Daphne Mazereon.—T. Farrar, Kenosha Co., Wis. This is a pretty flowering shrub, blooming very early in Spring, before the leaves appear, and on this account it is better to transplant it in the Fall. Increase the stock by cuttings, layers, and by division of the roots. Propagators succeed well with cuttings, making them in the Fall, and burying them in sand in the cellar, until April, when they are planted out in a light, deeply worked soil.

Chinese Grass-Cloth Plant (*Urtica nivea.*)—Mrs. Jane O'Brien, Allegany Co., Pa.: This plant belongs to the nettle family. It is an herbaceous perennial plant, growing about six feet high, and flourishes best in a moist peat soil. We do not know whether it will succeed in the Northern States or not. Will some one who has tried it please answer? The Rice Paper-plant belongs to the Leguminous or Pea family; its botanical name is *Seschynomene paludosa*. This will not succeed in the Northern States.

Black Pepper.—"N. T. S.", Waldo Co., Me. The *piper nigrum* of commerce is a berry growing on a climbing perennial plant in the East Indies, and is too tender for this climate. Quite likely it might be cultivated at the far South. The *white* pepper is made from the same berry after removing the dark outside surface.

Leathery Fungus.—W. H. Woodward, Marathon Co., Wis. The curious piece of "vegetable buckskin" you send is a fungus growth, analogous to "spunk" used for tinder. The resemblance to sheep skin or buckskin in color, texture, and *odor*, is very marked.

Orchard Hedge.—S. S. Shaw, Ionia Co., Mich. Honey Locust, (*Gleditschia triacanthus,*) makes the best hedge to fence out trespassers. Boys, cattle, and other stock can not well penetrate through the long, strong, and sharp thorns. Plant in single rows, two feet apart, and cut back to within a few inches of the ground to establish a bush form. It will need frequent shearing.

Osage Orange Seed.—Several inquirers. Most of this seed comes from Texas, and owing to the suspension of intercourse with the South, no seed of last season's growth has come to this market. Thorburn of this city has some old seed, a portion of which will doubtless grow. Price 75 cts. per quart.

To Propagate the Holly.—W. R. Robbins, Suffolk Co., N. Y. The holly is not easily propagated. It rarely grows from layers or cuttings, and the seed often lies in the ground one or even two years before vegetating. Meehan advises to mix the seed with sand, and leave for one year, when the whole should be sown. Transplant when one year old, and once or twice afterwards, before their final setting out in May.

Apples in Cold Climates.—G. Y. Armstrong, Canada East. Surrounding the orchard with a belt of evergreens will be very beneficial in cold climates. Evergreens are sometimes set out in clumps in various places in the orchard itself. Plant only the hardy varieties of apples, such as Pomme Gris, Canadian Reinette, Roxbury Russet, Talman's Sweeting, St. Lawrance, Bourrassa, Danvers' Winter Sweet, Fameuse or Snow Apple, Ribstone Pippin, Rhode Island Greening, Red Astrachan, etc. We have named them in the order of hardiness; the last named is one of the best apples.

Wash for Fruit Trees.—L. T. Robbins, Plymouth Co., Mass., has used the following wash on his fruit trees for 20 years, and to good satisfaction, applying it early in June. Take equal parts of soft soap, clay and fresh cow manure, mix with water to a convenient thickness and apply with a stiff broom or brush. With a stiff corn broom he coats the large limbs as far as he can reach.

Field Beans for a crop in Young Orchards.—There is none better. Plant in hills or drills—if in hills 30 inches one way and 15 the other; if in drills, 30 inches apart and about 6 beans to the foot. The quality of the soil should decide the manner of planting, if it be capable of producing a large crop, plant in drills. The Marrowfat field bean (white), or the common white bean are the advisable sorts. The former has a little tendency to run if strong manure has been applied.

Raspberries Failing to Send up New Canes.—A. Allen, Clinton Co., O. The principal cause of failure was allowing the enfeebled canes to ripen fruit the season of transplanting, after a long journey. The canes should have been cut down to 10 or 15 inches of the ground, when they would probably have thrown up new shoots.

Strawberries — Hermaphrodites Prolific.—F. M. Giddings, Ashtabula Co., O. It was formerly supposed that only pistillates were really productive, and a few nurserymen, like the one you refer to, still maintain that hermaphrodites can not bear abundantly. The Wilson, Austin, Hooker, Longworth's Prolific, Triomphe de Gand, Bartlett, Downer's Prolific, etc., all perfect varieties, entirely upset this theory.

Strawberries with Dwarf Pears.—W. J. Moore, Boyle Co., Ky. Your plan of planting strawberry beds between the rows of dwarf pears will answer very well for a time, if on good, rich soil. For list of desirable sorts see February *Agriculturist*, page 36.

White Turnip.—W. W. Johnson, Penobscot Co., Me. The white turnip you speak of as a good keeper, in shape and appearance like the rutabaga, is probably the Long White French, which we are distributing as a valuable sort.

Hybrid Turnip Seed.—"C. A. W." Hudson, N. H., writes: A carrot was set near a turnip of the round flat English variety. The turnip seed thus raised produced a crop, part of which were white as usual, and a part deeply tinged with orange. Had the carrot any thing to do with this? ..No. Some other kind of turnip grew within a few feet or rods.

To Keep Black Fly or Flea from Cabbages.—Sift on lime while the dew is on; sift on plaster, or flour and black pepper mixed, or ashes, or snuff; or strew tobacco stems through the field; or boil the stems, and sprinkle on the water; all these are recommended, and we have tried some of them with partial success, but hardly know which to recommend.

Sweet Potato Plants by Mail.—H. A. Lamb, Worcester Co., Mass. It is cheaper to send small parcels by mail, and they will go safely, if well put up. The expense of sending by mail is 1 cent per ounce. No more than 8 ounces can go in a single package.

Horse Beans.—S. B. Luckett, Wayne Co., Iowa. The horse bean is much used for stock food in England, where it flourishes finely. The seasons are too warm and dry for them in this country.

Sorghum Sugar Refinery.—Lathrop & Smith, of Oswego, N. Y., propose to put up an expensive sorghum sugar mill and refinery, if they can get a pledge that 800 acres of the sorghum will be planted this season in their vicinity. The refinery will cost $60,000 to $75,000, and preparations already made indicate that the 800 acres will be planted, and much more besides.

Good Lawn Grass.—The Kentucky Blue Grass, referred to in the October *Agriculturist*, page 292, appears all right. To-day (April 19) it presents a uniform green mat, while the Italian Perennial Rye Grass, near by, looks brown and much killed. We feel paid for waiting the slow—all Summer—starting of the Blue Grass. It will stand frost. One kind of grass, thinly sown, makes a prettier lawn or yard than any mixture can do.

Top Dressing for Pastures.—Bone-dust and guano put on after giving the land a light scratching with a harrow, and then rolled in if practicable, or sowed on and left to itself, is a good dressing. Use per acre, 5 to 10 bushels of bone-dust, and 150 to 250 lbs. of Peruvian guano, *known* to be pure. On lands benefitted by plaster, use it in such quantity as experience proves best in any neighborhood—from 250 lbs. to 500 lbs. to the acre. Unleached ashes are often capable of renovating pastures for a length of time. A single dressing showing marked effects after six or eight years. The quantity to be applied varies also greatly (from 10 to 30 bushels), and none can advise with accuracy; on light lands use less than on heavy clays.

Salt for Chimneys.—The *Allg. Deutscher Telegraph* says that chimneys built with mortar containing salt will require no sweeping, and be free from danger of catching on fire. An instance is given of a chimney thus built thirty years ago, which has never needed cleaning, and has never burned out. It is claimed that the salt gradually dissolves in damp weather, and carries the soot as it runs down. This may answer where wood is burned, but from coal fires the ashes or "soot" consists mainly of fine dry ashes, which would not be affected by the salt, even suppose enough of it would flow from the morter to dissolve anything.

Weeds and Dirt.—Johnson's definition of dirt, is "matter out of place," which is broad, and perhaps accurate enough. To weeds have been applied a similar definition, viz.: "Plants growing out of place."

Silk Weed.—J. P. Cawley, Salem Co., N. J. The pod containing the delicate silky egret, or hairy down, is from the *Asclepias cornuti*, or milk weed. Attention has been directed to it for giving a silky gloss to fabrics, it is said with some success. It may answer some purposes, but the fiber is too tender for spinning, we judge.

Eradicating Alders.—Ed. West, Stafford Co., N. H. We have cleared the Black Alder (*Alnus incana,*) from swamp land by cutting off a few of the roots and winding a chain about the clump, near the roots, and hitching a strong pair of oxen to draw them out. Begin upon one side, and make clean work as you proceed. It can be done quite expeditiously.

Manurial Value.—P. H. Foster, a Long Island farmer, put us a hard question. "What is the actual value for manure of various substances, taking the price of a bushel of corn as a standard?" Let us take barn-yard manure. On Long Island, and throughout the Eastern States, it is called worth $1 for a load for a pair of cattle—that is 1 load=2 bushels of corn. In Illinois, manure is considered worth less than nothing in many places, and corn 10 to 20 cents per bushel. You see we can not compare them.

An Aged Hen.—"Subscriber," Carlisle Station, O., writes, that he has a Prussian hen raised by himself in 1841, which makes her 21 years old. She is of a clear white color, medium size, was a good layer and successful in raising one or two broods of chickens every season, until the past two or three years. She still exhibits a maternal care over the broods in general.—Is not this the oldest hen on record?

Poultry Experience.—"Hampton," of Holyoke, Mass., writes, that many years ago, while yet a boy, he began taking the *Agriculturist*, and derived many hints from it, which he has been practicing upon since he has grown up, and here is *one* of the results: For fourteen years he has kept poultry, and considers them the most profitable stock in his farm. They have seldom failed to give him fresh eggs daily through every Winter. They have a light room, with a window facing south, roosts on one side, and laying boxes on the other. They have a box containing ashes and old mortar pounded fine, to roll in. When the ground is frozen, they consume finely broken oyster shells and bones freely. Their main food is corn and oats mixed, as much as they will eat, twice a day, with occasional change to scalded meal. Once in a week during Winter, when insects are inaccessible, the fowls receive a little fresh meat. With the above treatment they have kept in good condition, and 15 hens, have given 4 to 8 eggs a day during the entire Winter.

A Good Scare-Crow.—The various works of art which we annually see in corn-fields do not please the taste. The following is an old one. "Take corn, and string each kernel on a horse hair—white is best—tying a

good knot in it to prevent its slipping off. Scatter these enticements in various parts of the field where crows and black-birds are wont to alight. No crow will eat more than one or two kernels in that field or any other very soon. The two ends of a horse-hair sticking out of his mouth, well anchored in his maws by a fine kernel of corn, will be nothing of a pleasure to him, and he and his company will leave for parts unknown."

Plans for Bird Houses.—(Charles.) No, Charley, we have none, in our portfolio. But you, or your father, or the carpenter, can contrive something suitable. The Indians, you know, hang up calabashes on the sides of their huts, or on trees close at hand, and the birds soon occupy them. Almost any kind of box will answer; the birds are not fastidious about styles of architecture. But if you can make a little house, resembling in its outlines the house you live in, it will show some skill and taste on your part. A neighbor of ours has made a little Gothic cottage, a miniature edition of his own residence, and the birds like it. Another man, near by, has lately made a sort of Chinese pagoda, an octagon about 18 inches high and ten broad, and set it up on the top of a pillar twenty feet high. The blue birds have already begun to make reconnoisances about it, and will ere long take full possession.

Pepper *versus* Rats.—A subscriber recommends to fill the holes of rats with colored cotton sprinkled with pepper.—*Query:* Do rats dislike pepper, and if they do, will they not immediately dig new holes, and thus do more damage than if left to go freely into their old haunts? Their destruction is the only sure remedy—but how to secure this is a puzzling question.

Cotton Wadding *versus* Cucumber Bugs.—Take cotton wadding, cut it into pieces 8 inches square, split it, spread one piece glazed side up over each hill, just as the plant is coming through the ground, and pin it fast to the earth, with a sharp stick at each corner, a wire with a hook at the tip will do, to keep the wind from blowing it away. This practice J. Banister of Essex Co., N. J., assures the *Agriculturist* "will keep all bugs off, and protect the vines from slight frosts. The protection is perfect, the result satisfactory, the cost trifling; and the crop will or may be two weeks earlier than it can be without this protection."

Coal Tar for Moles and Cut-worms.—"C. C.," Jamesburg, N. J., alluding to doubts stated in a recent number of the *Agriculturist*, whether moles really *eat* peas, says, that however that may be, they *destroyed* his crop, at least, for two years. Last season he soaked the peas in a week solution of coal tar—a teaspoonful of tar to a quart of water—and the moles did not disturb them, though at work elsewhere in the garden. A neighbor drove them from working in his sweet potato hills, by pouring a little of the tar water in a slight trench around the plants. It was also tried around tomato and cabbage plants, and the cut worms did not trouble them.

Old Horses.—"Senex." Some horses are old at ten years of age, and some not until twenty. It depends chiefly upon the way they have been treated. The prevailing impression that a horse necessarily begins to fail after nine years of age, is a mistaken one. A horse does not attain his full growth and perfection of physical power till past his seventh year. He does not begin to run down right away. If he is not overstrained with heavy loads, or over-driven, or misused in any way, he will be in his most serviceable condition between his seventh and fifteenth years. For a family horse, or a safe saddle horse, or for real valuable service on the road or the farm, give us one who has sown his wild oats, and is content to be sober and quiet.

Glanders in Horses.—S. B. H., of Lumberton, N. J., in reply to the article on page 44, February *Agriculturist* says: He does not think by the symptoms that the horse has the glanders, but rather *Caries* of the teeth. The horse should be examined, and if the teeth are found to be decayed they should be extracted. Caries are often taken for glanders, and a person should be very careful to examine the teeth before resorting to severe treatment for glanders.

Points of a Horse.—"M.", of Malden, Mass., and others, will find illustrations on page 11 of vol. 18, (1859,) showing the points of a horse, both in skeleton and covered with muscles. We can not repeat them now.

Cattle—$1 More on Each.—An intelligent observer, not himself interested in raising or selling improved cattle, writes to the *Agriculturist* from Hartford Co., Conn., that he doubts not the influence of the State Agricultural Society, and of the late Homestead, have together raised the value of all cattle in Connecticut an average of $2 per head; and he well says: How large would be the aggregate profit, if the average value of all the cattle in the United States were increased in value only $1 per head. Yet this increased value, and more, will be secured so soon as farmers understand the result of even a slight admixture of improved blood.

Garget or Caked Bag.—A. A. H., of Hillsboro' Co., N. H., communicates to the *Agriculturist* a simple remedy that, he says, will cure a cow in nine cases out of ten, if applied as soon as discovered, or very early. Bathe the bag in cold water for 30 or 40 minutes. Two applications (night and morning) will effect a cure.

Wrong Side of the Tree.—A subscriber in Stark Co., Ill., suggests a friendly criticism on the vignette of the February *Agriculturist*, viz.: that the man begins to cut on the wrong side of a leaning tree; he thinks "the artist at least was not brought up in the woods."——Precisely so, but *we* claim to know better, having felled many hundreds of trees with our own hands. (The "*we*," here includes several editors.) The picture was designed merely as a pleasant sketch of a scene common in the western wooded countries, and not to illustrate the particular method of felling trees. We acknowledge the criticism, and say to all novices when cutting down leaning trees, make the first and largest notch on the side the tree is to fall, which will prevent its splitting upward.

Coloring of Autumnal Foliage.—"Mary" thinks, as do many others, that the beautiful coloring of the leaves in the Fall is caused by the frost. Doubtless King Jack hastens the painting somewhat, and dashes in some of the most vivid tints. But that is all. Did you not observe, last Autumn, that the trees were dressed in their most gorgeous robes, and that, too, before there was scarcely any sign of frost? The transformation was gradual, and therefore less striking than when it is the work almost of a single night. This change in the color of the leaf we must therefore ascribe to its ripening, rather than to its freezing.

Soda, Saleratus, etc., in Cookery.—A. M. Ward, Hartford Co., Conn., writes: "Four years ago I forbid the use of *Soda* and *Cream of Tartar* [doubtless saleratus also.—Ed.] in my family—we had spent money by hundreds of dollars on our teeth, but a *soft rot* ever made dread havoc. Now for two years past, a "toothache" has been unknown in our circle. I have two children, the oldest 5½, and neither has a tooth blemish. At first my wife said 'You can have no cakes now, nothing made of flour, but plain bread, and even that *uncertain*,'—but we have no lack of such luxuries, good in quality and variety. In my receipt book I discard *any* and *all* receipts having the above articles incorporated; and as a humane medium I would like to see the same stand occupied by the *Agriculturist*." [On the other hand, we could speak of the good resulting from the use of soda as a tooth wash. Chemistry does not indicate the unhealthfulness of moderate quantities of soda and cream tartar. Soda is an alkali, and neutralizes the action of acids in sour foods. Tartaric acid can be no more hurtful than the grape juice from which it is derived.—Ed.]

Botanizing Boxes and Bags.—"J. A. G." On page 276, Vol. XX, we mentioned an India rubber bag for carrying flowers; doubtless oil silk would answer. The flap must be made large to prevent circulation of air; the fabric light, and when filled it must be carried in a tin or other box. Delicate flowers are best carried and kept from wilting in corked bottles with a few drops of water, and straws enough to prevent their falling from one side to another. A good, close shutting, tin box, oval, 6 or 7 inches wide, 3 or 4 deep, and 12 to 14 long, opening on the side, and having a compartment at one end for water plants, with a cover like that of a pint pail, is a convenient form of botanical box for common use.

"Land Poor."—A subscriber who read the article with this heading, published on page 337, last volume, says it was intended for him, and that he shall take immediate steps to reduce his cares, expenses, anxiety, labor and taxes, by disposing of a portion of his land and improving the remainder. He is no longer going to be a slave to the title of "large possessions."

One Man's Complaint.—Among all the good words said to and for this journal, it would be strange not to have a complaint now and then. If done in a right spirit, we think most of those who tell us of our faults as well as of our good deeds. Here is a complaint we do *not* like: Mr.—— writes that "he can't endure the *Agriculturist* any longer, because it uses the imperative mood." [This man has studied grammer, and understands *moods*.] "The paper continually says 'do so,' or 'do so,' and I don't like this imperative tone...."—Well, well, must we give up our most cherished plan of putting a good many thoughts into a paper that can be afforded cheaply?—we do not like to have the appearance of haughtiness It is briefer to say: "Look out for slippery paths in the cow yards; spread some manure on the asparagus bed to keep it from freezing deeply; put a few bundles of straw around the pump when liable to be frozen, etc." But must we needs say: "It is respectfully and reverently suggested that the reader should look out that no slippery places be left in the cow yards; we respectfully and humbly suggest that the reader will find it advantageous to put some manure on the asparagus bed to keep it from freezing too deeply," etc. Why friend, we are in favor of the utmost suavity in talking to members of this free and republican country; but it is so much *shorter* to use the "imperative" form to convey the same idea, that we beg the privilege of continuing it *so as to save room for more hints*.

Okra Seed for Coffee.—S. Ransom, Warren Co., Ill. The seeds you send are *Okra*, (not Oker, as called in the Chicago Tribune.) For culture see April *Agriculturist*, p. 101. The plant is very common, and the seed abundant—on sale at all our larger seed stores. We have heard of the dry seeds being used for coffee, but have not tried them, and do not think they are of much worth for this purpose. The green pods are excellent for making soup—called "Gumbo Soup" at the South. We grow it for this from seed sown every Spring.

Illinois Coffee.—Peas $1,240 per Bushel.—Cautioning our readers against coffee humbugs, (page 101,) we called upon Mr. Huffman, of Illinois, to make some return for the $1.06 sent him. In justice we will say, that three weeks after the money was sent, we received a package of 53 *chick peas* (*Cicer arietinum*). They cost just *two cents* each, and we presume they will make as good coffee, as any other *peas*. Printed directions for culture, etc., accompanied them. Now, although the pods yield but *two* peas each, we think, judging from our own crop the past season, Mr. Huffman has made a good thing out of an old pea, not unfrequently sold by our seedsmen during the past 20 years.

Patriotic Farmer's Club.—The Club at White Plains, N. Y., (Henry C. Field, *Pres.*, Sol. A. Haviland, *Sec.*, Jas. Gibson, *Treas.*,) at their meeting April 9, adopted patriotic resolutions, giving thanks to their brother farmers and others, battling nobly and bravely in the service of their country.

A Snowy Country.—The Maine Farmer states that a severe snow storm entirely covered a house in the town of Mexico, (Me.), burying two families, who were only relieved by the neighbors tunnelling through 40 feet of drift until they reached the front door. If "snow is the poor man's manure," Maine should be a fertile State.

Rain in California.—Apropos to the above is the amount of rain which fell in California and Oregon during the past Winter. According to the California Farmer, over 35 inches of rain fell in San Francisco from the 19th of November to the 22d of January. The average quantity of rain in that vicinity is about 20 inches annually, while here, in the vicinity of New-York City it is 55 to 60 inches.

Cheap Sewing Machines.—A Babcock, Union Co., Ill. All these small "pocket" machines, which are screwed upon a dining table or stand, and work with a crochet hook or needle, are altogether too cheap, or rather dear, at any price, whether it be $5 or $10. We know purchasers who would be glad to re-sell their "cheap machines" for $1 or less.

Manure Book Wanted.—Several subscribers inquire for a good book adapted specially to the use of manures; and one, on being told that there is no such work, complete and reliable, suggests that some practical farmer or competent chemist would benefit others and his own pocket also, by getting up such a book. We do not know any one man capable of writing such a book in the present state of our knowledge on the subject. There are too many unsettled theories as to the action and value of different kinds of organic and mineral manures. In a series of articles given in the *Agriculturist*, Vol. 19, (1860), we tried to set forth our own views, so far as confirmed by experience—with some theory.

Soda Crackers.—We published in 1860, the method for making soda crackers. It is hardly worth while to repeat it, for it is very difficult to make them in private families so that they will resemble the bakers'. A sponge is set over night, and the next morning stiffened with flour, butter or lard added, and the whole well rubbed together and beaten, and finally rolled out, cut and pricked as we see them, and baked in a brick oven.

The Agricultural Bureau—Who Shall be at the Head of it?

Letters from Washington assure us that the House Bill for the Establishment of an Agricultural Bureau, will certainly be passed in the Senate and become a law. We were at first inclined to favor its passage, even with its objectionable features. But we can not do so, and for this reason. Within the last three weeks we have received ever so many letters from parties (and their friends), who are lobbying the bill through, because each one of these parties has a *personal* interest in the matter—each one is expecting to be placed at the head of it with the comfortable salary of $3,000 a year. Some of them are our personal friends, good, honest men, too; and we especially dislike to forfeit the good will of those who privately promise that the *Agriculturist* shall lose nothing if it will only advocate their individual claims. How can we do so for *each*, if the interests of agriculture compel us to say frankly that we do not believe one of the applicants now seeking the appointment of Commissioner of the proposed Agricultural Bureau would, if successful, be "the right man in the right place?"

If the proposed Department, or Bureau of Agriculture, as a part of the Government of the country, is to amount to any thing, it must have at its head a man of no less breadth of mind and capability, than is required for the other Departments of the Government—added to which he should have the *experience* of a large cultivator. The trouble in the past has been, that the sub-Secretaries in the Department of the Patent Office allotted to agriculture, have not been first or second class men, but mainly fifteenth rate inefficient fellows—such as D. J. Browne, Lee, Clemsen, etc. We could name a dozen men among the reporters of the city press, two dozen or more city or country editors, a hundred country-bred clerks in our city stores, and two hundred officers of our Agricultural Societies, any one of whom would be better fitted to conduct the Department of Agriculture than several of those who have had most to do with that interest in Washington for half a dozen years past. We will guarantee to send out from the *Agriculturist* Office at least five men who would conduct the seed distribution, and other matters, in the wing of the Patent Office, and collect and diffuse more valuable statistics, and even get up a more useful "Annual Report" than anything that has emanated from Washington, since Commissioner Ellsworth's day.

But we want, farmers want, the country wants at the head of the proposed Agricultural Bureau some such man as N. P. Banks, for example, who has had not only large experience as a cultivator, but has shown himself to possess administrative talent, a broad comprehensive mind capable of looking over the whole country, to take in at a glance the needs of agriculture, and the facilities for supplying those necessities. A fourth rate clerk can attend to the details, but eminent ability is required to direct what is wanted. Such men are to be found, and our great agricultural interests need their efforts, and afford abundant scope for their talents. There are many more men fitted to be governors of States, than there are to be placed at the head of a Bureau of Agriculture, in the Government of these United States—pre-eminently the greatest agricultural country of the world. We hope the President, or whoever may have the appointing power—if the proposed Department be organized—will weigh the matter well, before filling so important an office. It is not our province to nominate candidates. We named Mr. Banks merely as an illustration of the kind of talent wanted. We see that the Saratoga Press, in a recent editorial, and two or three other journals, nominate the writer of this, for "Chief of the new Agricultural Bureau." With thanks for the friendly spirit shown, we beg most respectfully to decline any such nomination—even on the intimation that "if we dont take the office, somebody less well qualified will." We don't begin to possess the ability of the man whom we would have placed at the head of such a Department, and if we were vain enough to suspect we had, our present position is abundantly satisfactory for our ambition, and is only second in importance to an agricultural Bureau. Every day we feel our own incompetency, and would be happy to call to our aid some one who can make the *Agriculturist* even a better promoter of the agricultural interests of the country than it now is. We would gladly surrender the editorial pen entirely to more competent hands, and devote ourself wholly to the necessary pecuniary or publishing interest—as a "hewer of wood and drawer of water."

We trust the views set forth above will be a sufficient answer to those who have done us the honor to solicit the influence of this journal in aiding them to secure a place at the head of the Agricultural Bureau—proposed. We care not who secures the office, if he be an honest man, and fully *competent* to perform its duties.

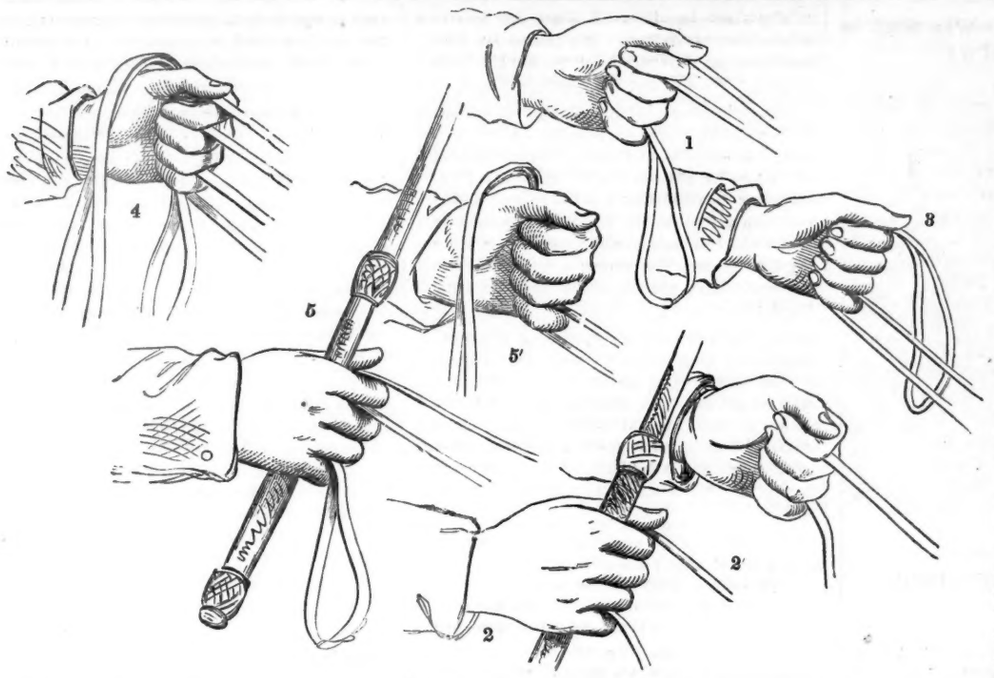
Rotation of Crops.

There are various arguments for the practice of raising different kinds of crops in succession upon the same piece of land, now common in the older parts of this country. These arguments are based both upon practice and theory; the former being to most of us the more conclusive. Long ago it was discovered that much land would bear a good crop of grain only once in two or three years without manure, and that to secure a crop, it was necessary to plow or otherwise work over the land in the mean time. This system of *fallowing* necessarily left the land at least half the time with no crop upon it, and the farmer depended for a crop upon the decompositions wrought in the soil by the action of the elements, aided by his own labor in overturning and pulverizing it. When it was discovered that a crop of roots could be raised between the crops of grain, and the effect of fallowing still be realized, the roots were regarded as clear gain, and the whole system of farming was changed. Now, on all those lands where farmers are obliged to be economical of fertility, some system of alternation or variation, if not a proper rotation of crops, is employed. It is enough for most farmers to know by experience that—whether they depend on the fertility of the soil alone, on the green manure which they plow in, or on the dung of cattle which they apply—they realize by this means a much better return for the time, labor, and available fertility expended.

Some crops seem very rapidly to exhaust fertility so far as they alone are concerned; and the theory of many is, that this exhaustion results from their appropriating the most available supplies of certain substances essential to their growth. Other crops either use less of these substances, or have the ability to collect them more easily. Thus turnips, though they remove from the soil a comparatively small quantity of the phosphates, yet an abundant supply in a very available form promotes their growth and increases the yield, in an entirely disproportionate degree.* And wheat and other small grains demand a proportion of available nitrogen greater than other crops which remove more from the field. The benefit of an alternation or rotation of crops being a recognized fact, and it being also true that under certain ill-judged modes of farming land became unaccountably *sick* of certain crops which before grew well, M. Decandolle proposed a theory which met the case, and was almost universally received. It was that the roots of the crops throw off, or excrete substances in the soil (which is true), and that these substances while injurious to the plant which throws them off, are food for other kinds of plants, (which, at least to any appreciable extent, is not true.) Still it very simply and fully accounted for the facts as then known.—Almost all plants have their natural enemies, parasitic plants, like smut, rust, etc., or insects which live upon them—and when a plant grows several years in the same soil, it becomes more and more a prey to these, and perhaps subject to other diseases having similar but not so obvious causes. In this view of the subject the excretory theory may find legitimate application.

When the full value of manure is realized, practice has demonstrated that crops must follow each other in the order of their dissimilarity—for instance: grain, roots, grass, leguminous plants (peas, beans, clover seed, etc.); oil plants, (colza, rape, poppy, flax seed, etc.); and commercial plants raised for the plant itself (tobacco, hemp, flax, madder and other dye-stuffs, etc.) The longer the time intervening between two crops of the same plant, the better. Rotations are usually short in this country, and the land manured but once. In other countries, rotations continued through ten or twelve years are not uncommon. One reason for this is, that in our market there is not a demand for so many products, though this evil is rapidly diminishing. Different soils and different markets make different crops profitable. The culture of Indian corn in this country is so different from the other cereals, that it is classed by itself, or with potatoes, though potatoes will not bear the manure that corn will, and in this respect, tobacco and corn are similar, and may occupy similar places in a rotation. Where the clover and wheat alternation is practiced, good crops may be raised several years without manure; thus: wheat on clover sod plastered and seeded down with clover; the next year clover fed or cut; third year clover pastured in Spring, and clover sod turned under and wheat sowed. Some land improves for a while under this system, but there is danger of its becoming clover sick, and refusing both crops. Another ill-judged rotation is: corn on sod with manure, oats, wheat with bone-dust, superphosphate or guano; and finally grass. Corn with manure, oats; clover, wheat, grass, is much better. Corn or tobacco, roots, spring grain, clover, wheat, grass, is still better, and for many parts of the country a good practical rotation. The wheat will be benefited by a special manuring in many cases, and the roots may receive the bulk of the manure plowed in in the Fall after the corn is taken off, —the corn being made to depend in a great measure on the sod turned in. W.

* It may be considered still an open question, whether the beneficial results arising from the use of soluble phosphatic manures are due to the direct absorption of phosphoric acid as plant food, or whether this acid does not act mainly as a powerful absorber and retainer of ammonia. So also it may be questioned, whether less of the costly phosphoric acid, and more of the cheaper sulphuric acid may not be productive of equally good results. O. J.



Driving Horses—Holding the Reins.

Many a fatal accident has occurred, with good steady horses too, from the driver having a loose or awkward hold upon the reins just at some critical moment. Not only must his attention be upon his horses, and his eye schooled to notice the least unusual motion of their heads, ears, or gait, any loosening of a buckle, or slipping of the harness, but the reins must be so thoroughly in his grasp that at all times the team is fully under his control, and not only so, but conscious of it themselves. A weak, uncertain hold upon the lines gives a wilful horse a sense of unrestraint, a timorous one a lack of confidence in his driver, a shying, frisky, nervous beast all the excuse he wants to turn a summerset or cut some other caper. Herbert, (Frank Forrester,) lays great stress upon the *manner* of holding the reins, and we employ sketches in his "Hints to Horsekeepers," to illustrate the subject. There are two methods generally approved; in both the reins are commonly held in the left hand, and the off-rein passed into the right hand whenever necessary. This must often be the work of an instant, and so in whatever way the lines are held, the nigh-rein must not be in the way, nor may the hold upon it slacken. In the engraving at 1, the off-rein is seen to pass over the fore-finger, the nigh one under it, and both out between the ring-finger and little-finger. The right hand takes the off-rein, as seen in 2 and 2′, while at the same time a firm grasp is had upon the whip. At 3 we see another method of holding a single pair of reins, the off-rein in this case being between the ring-finger and little finger, and the nigh-rein below, both ends passing out over the fore-finger, beneath the thumb. This is not so strong or easy a hold. The method of holding the reins in four-in-hand driving is illustrated at 4, 5 and 5′; 4 shows the left-hand holding the four reins, the off-reins being the upper ones, the ends passing down through the hand; and the nigh-reins held as both reins are in 3, the ends passing up, and over the thumb. When taken in two hands, the nigh-reins remain unchanged in the left hand (5′), and the off-reins are passed into the right hand (5), and held as in 1. In whatever way the reins are held in driving, the driver should be so familiar with them that he can, without giving a thought to it, as quick as thought, change or shift them about, and never slacken his hold or lose perfect control of his horses.

Washing and Shearing Sheep.

The object of washing is to cleanse the wool from the yolk or gum which is an oily soap secreted by the skin, as well as to remove any other soluble dirt from the fleece. The hard balls of filth which adhere to the wool will remain in spite of the washing, and if soaked often stain the adjoining fleece. In those sheep whose wool abounds in yolk, as the Merino, the shearing is much facilitated by washing, and in all kinds the wool is whiter, cleaner, and presents a better appearance. The objections to washing are, that unless extreme care is used, accidents will happen to the sheep, and this loss more than balances the gain to the owner. Even with care, colds and catarrh ("the snuffles") almost uniformly arise from the sudden chilling bath, and the health of the sheep is often permanently injured. Without washing, sheep may be safely shorn ten days to three weeks earlier than when we have to wait for the weather or water to become warm. At this season many will be shedding their wool, especially ewes with lamb, and a large share of the fleece is thus sometimes wasted. The loss for a few month's time embracing the last of May, and first of June, probably equals or exceeds the growth for the same period, so that one twelfth, at least, is wasted.

To get the greatest yield of wool for the year we should shear early, without washing. This is also a saving of labor, for the labor of washing more than balances the extra trouble of shearing them unwashed, and it also secures the health of the flock. But on the other hand, buyers insist on deducting one third for unwashed wool, and the quality appears hardly as good as it really is. Most kinds of wool do not shrink one third by washing on the back of the sheep, but farmers will continue to roll up in their unwashed fleeces what really belongs to the dung-hill, so that perhaps it is not, on an average, too large a deduction. The best flock masters in many sections, are generally discontinuing the practice of washing; and breeders of very valuable sheep very rarely, perhaps never, subject them to the operation. If a sheep is worth $100, the risk to his life and health is too great, and it is safe to say that in a flock of which it will take 20 sheep to be worth $100, the risk is decidedly greater, or rather there is almost an absolute certainty of some essential damage to the flock by colds contracted, etc. Sheep washing as practiced by the best farmers is on this wise: A morning is selected as early in June as the weather is warm enough not to chill the washers or sheep, immediately after a good rain. The sheep are then well soaked, and half the labor is accomplished. There is no dust on the roads, and the sheep may return clean to their pastures. A pen made of boards or hurdles, just large enough to hold the flock and so high and firm that they can not possibly escape, is upon the bank of a clear brisk stream. A dam of a few feet in hight raises the water so that it flows in troughs and falls with some force upon the sheep held by the washers in a pool below, where the water is just deep enough to swim the sheep. By coaxing with salt and gentle driving, the sheep are gathered in the pen. ALL *rudeness* in driving and in handling is avoided; when once frightened they are very difficult to manage. Two men go into the water to wash, a third catches the sheep, and a fourth helps them out of the water. If they have not been well tagged before, it should be done before washing, for the water will not remove the hard lumps of dung. The sheep must not be held by the wool, except about the head, for it pulls out very readily at this time. The washers hold the sheep under the falling water, squeezing the wool until the water runs away clear. It is surprising to see how quickly the fleece of a sheep, well soaked by a previous rain, is cleansed.

Of all farm operations, sheep washing most needs "*the eye of the master*." In the excitement of the rude scene, the flock are liable to abuse, and too often from crowding in the pen, heated from over driving, or rude handling, serious losses occur; and sheep are not unfrequently found in the pen dead, or in a dying condition. They must be driven slowly from the washing to a clean pasture. The whole operation is a most distressing one to the sheep, increased almost uniformly by the roughness of the men, the best of whom seem to think it fine sport, and show no tenderness or humanity in their handling of the poor frightened beasts. In about a week, if the weather is dry, they will be ready for shearing. They must not only be perfectly dry but the yolk must flow so as to give an oily softness to the wool. The barn floor is usually used for shearing, and must be repeatedly swept as the fresh shorn wool is easily soiled. Careful shearers, who will neither waste the wool by cutting it in two, nor wound the sheep, though this care makes them slower, are to be preferred to those

who cut and slash to do a great day's work.

In doing up the fleece, the inner side of the wool must be out, and there must be no concealed dirt within. The shrewd wool buyer buries his nose in the snowy fleece, like a dog after game, and external purity will not serve to conceal dishonesty and filth lurking within. Before the sheep are turned away they receive the owner's mark upon the side. Use a mixture of spirits turpentine, linseed oil, and lampblack. Turpentine facilitates the drying, but used in excess, the mark washes off too easily. The tar bucket must be on hand, and a dab on the nose is supposed to be a sovereign remedy to prevent all future ailments. With fine wool sheep which lamb in May, docking and castrating the lambs may be performed at the time of shearing, but if the lambs are earlier it may be best done while the weather is cool. They suffer less while they are small and there are no flies to attack the wounds. The tail should be cut off at the first joint, leaving the skin long enough to cover the stump.

Notes on the April Agriculturist.

BY A WESTERN FARMER.

"*Patent Office—Agricultural Department.*"—A humbug—and nothing else! as it has been heretofore conducted. Abolish the thing at once, or put a sensible, honest, agricultural man at the head of it, instead of the charlatans who have occupied it pretty much ever since it was established. Its books have been—trash; its seeds, nine out of ten—worthless. A Congressman's "tub," to his constituent "whale." I could talk an hour about it to prove my assertions, were it necessary to establish the proof. I hope Congress will not vote another dollar to support it, unless the whole thing is thoroughly reorganized.....

"*Hints on Tobacco Culture.*"—Folks will chew and smoke and snuff—talk as much as you please of their immorality, unwholesomeness, and expense... As for the *nastiness* of the habit, let those whom it troubles, settle it. At all events, tobacco is used as much as ever, and probably will be so long as the users can get the means to pay for it. Such, then, being the fact, let those who grow the weed, produce the best article, and at the cheapest rate.....

"*Where did it Come from?*—A most suggestive article. A chapter occupying half your paper might be written on it, and not half exhausted. Some years ago, a certain Doctor, editor of one of our agricultural papers, and late an editor of a Georgia paper of like character, used to hold, that according to the system—or rather, no system—of our American agriculture, our soils were 'all going to pot.' The fact is, our soils, where they have been thirty, or forty years under intelligent cultivation, are growing better. But it is too long a story, and if I once go into it, I shall not know where to stop. Any thinking man can cypher out the reasons to support any asserted *fact*.....

"*Chester County Pigs.*"—A good breed of *large* hogs, no doubt. But why "Chester" County? I assert, and ask for proof to the contrary, that they are nothing but a composite *style*, not *breed* of hogs, made up of Leicester, Yorkshire, and every other sort of stout, good-looking white hogs that the breeders of them fancied as the *material* to make up the thing they choose to call "Chester County." Show me the pedigrees, accurately traced back to the originals, and then we'll talk further about it. I have seen the predominating characteristics of at least three or four good breeds of pig in the "Chester's;" some more, some less, but not uniform, either in the whole breed, or in a single litter. When I see half a dozen so-called thorough bred sows breeding from one boar a lot of pigs looking as much alike throughout as so many white kidney beans, I'll believe in the *purity* of their blood—and not before....

"*Value of Blood in Animals.*"—Yes. I believe in blood—in *folks*, even, as well as in cattle, pigs, or poultry; and breeders of stock will never get any thing right, and *certain*, until they pay attention to it. But what do you mean, Mr. Editor, when you say, "Our breeders of thoroughbred cattle, of all the improved breeds, commit a great error in holding their bull calves at so high a price as to prevent sales, and finally, as is often done, making stags of them rather than sell them at a low price. If they would even give away the bull calves which they do not wish to keep, and which are not worth a very high price, on condition, &c." A total mistake, Mr. Editor. Cost nothing, worth nothing. If a man can see no better quality in my bulls and cows, which cost me two, three, or five hundred dollars a piece, than in his own dirty scrubs, and dunghills, worth twenty, he is not fit to have one of them. I've tried all this thing for thirty years, or more, and know just what it amounts to. No Sir; my experience is—and I am not called a stingy man, either—I'll make meat of a calf, pig, sheep, chicken, goose, duck, turkey, or pigeon, before I'll *give* the first hair, or feather of either to one of those unappreciative non-improvers, who will insist upon it, that, unless he can beg, borrow, or more likely, *steal* the services of my male thoroughbred things, his own plebeian wretches are as good, or a little better than mine. Just practice on your own advice a year or two, and if you don't change your mind, I'll say that myself, and not you are mistaken.

"*Six best Shade Trees (Deciduous).*"—You have *not* got the "six best," Mr. Editor. The "White Elm" is good—the best of any—grand, thrifty, and enduring. The sugar maple is good, but too symmetrical, and formal, for picturesque effect. Yet I would have it, in moderate numbers. The several varieties of white, red, and other *soft* maples are better. They are hardy, thrifty, and throw, and dash, and wave their spray around with a freedom and grace that the *sugar* maple knows nothing about. I would have at least three of these *soft* to one of the *sugar*. As to the "oaks"—among shade or lawn trees they are like our American Indians when allied to civilization. The association kills them. The oaks, compared with most other of our native forest trees, are not hardy. They are difficult to transplant, and live. They grow comparatively slow, when they grow at all. They leaf out late, and have little beauty in their autumnal garniture, which I think a great merit in all shade trees. Still, a few well selected oaks, scattered in with other trees, look well, for variety; but I would recommend no one to plant a *row* of them. The "majesty, and grandeur" of a full grown *white* oak I concede; but as for the timber, they are better grown in a forest. I've grown thousands of them, and have them now, from the cane-sized sapling to those fit for the keel of a ship. *My experience* is: plant them *very sparingly* as shade trees. The "Linden"—good—either the European, ("*Tilia Europa*,") or the American "Bass wood." They are beautiful, grand, and stately; early to leaf, and late to fall; easy to transplant, and thrifty to grow. The "white ash" is a noble tree, but too late in leafing out, and too early to shed in the fall. Still, for a variety, I would have a few, only. Like the oak, a valuable timber tree, and better in the woods than elsewhere. The "Cucumber" is a fine tree—when you can get it—but it is difficult to grow, and if in a *windy* position, very apt to grow one-sided. Yet, one, or two for variety are well enough. Better fill up your other varieties with Birch, Willow, and Horse Chestnuts. The Tulip, or white-wood is a noble tree, of good symmetry, but a hard one to transplant and live, unless reared in the nursery. I never yet saw an avenue, or row of them, even in a white-wood country. Another thing: they will thrive only in a free, well drained soil. "Button-woods" are all diseased, and have been throughout the United States for the past thirty years. I know of but one truly *healthy* one within miles of my home, and I have many on my own grounds—cutting them away every now and then for the reason of their diseased unsightliness. As to the *nut*-bearing trees you name, be sure they will be protected from the ravages of "the boys," or the vexation of losing their fruit is more than they are worth. They are all hard to transplant, successfully. The American Chestnut is a princely tree in size and appearance, and we have scarcely one more useful. The beech is refractory to transplant; and the birch capricious in its choice of soils. A cool moist soil suits it best; White Willows grow every where, and Horse Chestnuts thrive in any tolerable soil, and are easy to transplant and live.

Advertisement—"*Something New.*"—"Dr. Brown's *patent* baby tending machine!" "Saves from $100 to $300 per year in any family where there is a baby!" Well; that will do—for an "Advertisement." Now, Dr. Brown, in that "saving" of $100 to $300 you tell a tough story! I know scores of families counting their children by the dozen, hardy as coons, and saucy as chip-monks, whose parents were never worth three hundred dollars, and never will be. Tough, stout, athletic youngsters—boys, and girls, as likely to be "somebody" in the world some day or other, as any body's children—and no "patent" about them either. A tree "gum" split in two, or ten feet of rough boards box shaped, with a hewed rocker under each end, and your "baby," after a full draft of a healthy mother's milk, is equipped in all its wants. Folks that don't know any better than to raise children at three hundred dollars apiece for a "baby jumper," may buy your machine. We don't do it in *our* country. JOSH.

Concentrated Manures, or Articles sold as Such.

We received just too late for our April issue, an article from Dr. Evan Pugh, President of the Agricultural College of Penn., giving the results of the analysis of several artificial manures. The analyses were made under his own direction, and all the samples except those marked in the table A, K, and L, were obtained by a responsible member of the Philadelphia Agricultural Society, from the respective manufacturers of each, or their agents, without their knowing for what purpose they were procured. Mr. Lawes sent Dr. Pugh a tun of his superphosphate (A), and half a tun of his sulphate of ammonia manure (K), and from these the samples analyzed were derived. We are obliged to condense Dr. Pugh's communication somewhat; the following is the main substance of it. We do not fully endorse all the estimates, but let the Doctor give his own views:

ESTIMATION OF THE VALUE OF MANURES, ETC.

Manures are mainly valuable for the *phosphoric acid*, *nitrogen* and *potash* they contain. *Sulphuric acid* is much less valuable, and other constituents may be neglected [in high priced fertilizers]. All these substanses are much more valuable when in combinations soluble in water, than when in insoluble combination. Thus: potash in wood ashes, is more valuable than in powdered glass. Phosphoric acid, in superphosphates, is more valuable than in *raw* or *burned* bones. Nitrogen is more valuable in a salt of ammonia than in leather or horn. It is easy to fix a price upon all these substances by seeing at what price substances, containing known quantities of them, can be purchased in the market. We thus find the values of

Potash (as in wood ashes) to be worth about	4c. ℔ lb.
Phosphoric acid, insoluble (as in raw and burned *bone* phosphates.)	4½c. ℔ lb.
Phosphoric acid in combinations, *soluble in water* (as in superphosphates).	12½c. ℔ lb.
Nitrogen in combinations easily soluble.	17c. ℔ lb.
Sulphuric acid.	1c. ℔ lb.

Different agricultural chemists have assigned values varying slightly from the above,* which, with the exception of the last, were adopted by Prof. Johnson, of Yale College, in his able report to the Connecticut State Agricultural Society.†

In the statement of the analyses, the figures in the principal horizontal lines indicate the percentage composition or number of pounds of each ingredient in 100 pounds, and immediately below each is its market price. In estimating the selling price, the tun is regarded as 2000 pounds. Thus: in 100 pounds of Lawes' superphosphate (A), 13.77 lbs. i

TABLE *of Analyses and Computed Values of Various Fertilizers.*

MANURES EXAMINED.	Volatile at red heat.	Nitrogen.	Phosphoric Acid, in Water, Soluble.	Phosphoric Acid, in Water, Ins'l'ble	Sulphuric Acid.	Insoluble Silicates. [Sand.]	Selling price per ton.	Calculated value per ton.
A—Lawes' Superphosphate, [English]	30.78	.....	13.77	4.48	28.89	4.46	.....	$44.20
Value of Constituents in 100 lbs.	.....	.....	$1.72	$0.20	$0.29	.....	.....	.....
B—Rhodes' Superphosphate	46.18	.....	11.11	4.02	30.86	2.26	$45.00	$37.60
Value of Constituents in 100 lbs.	.....	.....	$1.39	$0.18	$0.31	.....	.....	.....
C—Berger & Butts' Superphosphate	19.75	.....	4.13	10.58	11.73	12.89	$45.00	$22.40
Value of Constituents in 100 lbs.	.....	.....	$0.52	$0.48	$0.12	.....	.....	.....
D—Baugh & Son's Raw-bone Phosphate	33.65	3.17	.05	10.52	18.18	8.53	$45.00	$23.80
Value of Constituents in 100 lbs.	.....	$0.54	.....	$0.47	$0.18	.....	.....	.....
E—Baugh & Son's Ground Raw-bone	40.55	4.49	.....	23.14	.96	.08	$35.00	$36.20
Value of Constituents in 100 lbs.	.....	$0.76	.....	$1.04	$0.01	.....	.....	.....
F—Tasker & Clark's Phosphoric Fertilizer	40.13	2,76	1.76	11.52	6.64	8.65	$40.00	$25.40
Value of Constituents in 100 lbs.	.....	$0.47	$0.22	$0.52	$0.06	.....	.....	.....
G—Tasker & Clark's Meat and Bone Compost	47.49	1.23	.....	9.43	.44	14.11	$25.09	$12.60
Value of Constituents in 100 lbs.	.....	$0.21	.....	$0.42	.....	.....	.....	.....
H—Mapes' Nitrogenized Superphosphate	25.31	1.35	.11	9.10	9.08	25.16	$50.00	$14.60
Value of Constituents in 100 lbs.	.....	$0.23	$0.01	$0.40	$0.09	.....	.....	.....
I—Lodi Company's Poudrette	41.59	1.38	.....	6.80	6.96	28.66	$2.00 pr. bbl	$11.40
Value of Constituents in 100 lbs.	.....	$0.23	.....	$0.27	.07	.....	.....	.....
J—Rogers & Gest's Ammoniacal Superphosphates	94.71	18.96	.....	.....	57.34	.34	$45.00	$75.80
Value of Constituents in 100 lbs.	.....	$3.22	.....	.....	$0.57	.....	.....	.....
K—Lawes' Sulphate of Ammonia, [English]	99.12	20.30	.....	.....	60.42	.....	.....	$80.80
Value of Constituents in 100 lbs.	.....	$3.44	.....	.....	$0.60	.....	.....	.....
L—Peruvian Guano	64.25	14.98	.....	13.16	.....	1.78	$60.00	$56.80
Value of Constituents in 100 lbs.	.....	$2.25	.....	$0.59	.....	.....	.....	.....
M—Government Peruvian Guano, [Philadelphia]	43.75	7.50	.....	12.98	2.46	18.34	$60.00	$37.60
Value of Constituents in 100 lbs.	.....	$1.28	.....	$0.58	$0.02	.....	.....	.....
N—Pacific Ocean Guano	23.31	8.75	.....	9.26	36.21	.42	$50.00	$45.20
Value of Constituents in 100 lbs.	.....	$1.49	.....	$0.40	$0.37	.....	.....	.....
O—New Fertilizer	17.20	.....	.....	2.43	6.00	58.65	.....	$3.40
Value of Constituents in 100 lbs.	.....	.....	.....	$0.11	$0.06	.....	.....	.....

soluble phosphoric acid, which at 12½ cents per pound—$1.72; 4.48 pounds insoluble phosphoric acid, at 4½ cents—20 cents, and 29 pounds of sulphuric acid at 1 cent per pound—29 cents; in all $2.21 per 100 pounds, or $44.20 per tun as given in the last column. To learn the value of a barrel of Lodi poudrette, weigh a barrel and multiply the weight by 57, and it will give the value in cents; when a barrel weighs 263 pounds it will be worth about 150 cents.

It will be seen at a glance at the 3d column, that only three manures analyzed are superphosphates; and the quantity of soluble phosphoric acid in Berger & Butts' is so small, that we can consider but 2 of them as genuine superphosphates. Tasker & Clark's fertilizer gives evidence of an attempt to make a superphosphate. The results in this column were obtained by boiling each sample in water 10 or 15 minutes. In the 4th column we have the amount of phosphoric acid existing in the form of raw or burnt bones. By the 2d column we may judge of the respective claims of the manures to the appellations "ammoniated," "nitrogenized," etc. Baugh & Son's manures, made from *raw bones*, show the superior value of this material over burned bones. In the one, 54 cents worth, and in the other, 76 cents worth of nitrogen to the 100 pounds are found, which would not have been present had burned bones been used in the manufacture.

The analysis of sample H, shows that a manure may be named and sold at a high price as an "Ammoniated Superphosphate" without having more than the most insignificant quantity of either ammonia or superphosphate in it. Such a name applied to such a manure expresses a dangerous falsehood. J, shows a large amount of nitrogen, but the manure contains no phosphoric acid; the name therefore is false, but the manure is good. J, and K, are both sulphates of ammonia and as ammoniacal manures are the most valuable in the list. The two guanos are seen to vary greatly in value.

In the 5th column the amounts of sulphuric acid are given. This comes from that used in making the superphosphates, from that constituting a part of sulphate of ammonia, or sulphate of potash, or from adulterations of gypsum (sulphate of lime) or sulphate of soda. In the 6th column we have *sand*, or earthy matter insoluble in water or acids, and worthless. The last two columns enable us to compare the calculated values with the selling prices. C, D, F, G & H, are sold for about double their values. B, is the cheapest American superphosphate; but it is sold at $7.40 per ton above its calculated value. The most flagrant imposition of all of them is Mapes' so-called "Ammoniated Superphosphate." It is sold for nearly three times as much as it is worth. The manufacture and sale of such a manure deserves the severest censure, as implying either gross ignorance or dishonesty. No wonder that, with such a mixture in the market, farmers are often disgusted with the use of artificial manures.

We find Rogers & Gest's "Ammoniacal Superphosphate" (sulphate of ammonia) by far the cheapest source of Nitrogen; Rhodes' superphosphate the cheapest source of soluble phosphate, and Baugh & Son's ground raw bones the cheapest source of bone phosphate.

The attention of farmers and dealers is seriously asked to the consideration of the above facts. To protect themselves, they should demand that manufacturers guarantee their manures to contain a *definite amount of those elements of fertility upon which their value is dependent.* The evidence which a true analysis gives, is worth volumes of recommendations from those who have "tried the manure."

* Let it be understood that these prices are those established or adopted by most agricultural chemists, and *if* their estimate of the manurial *value* of the several elements be right, these calculations are correct. On this point *we* are not so well satisfied as are some. We still doubt as to the estimated value of phosphoric acid, whether "soluble" or "insoluble." That this element is valuable as a fixer of ammonia, with which it combines readily, is undoubtedly true: and the same, in a less degree, may be said of sulphuric acid. The *essentiality* of phosphoric acid as a constituent in plants, and the degree to which it may be needed in any soil as a specific manure, is another question. We have great faith in ammonia and ammoniacal manures; and for our own use would buy only those largely abounding in this element, unless they contained sulphuric and phosphoric acid enough to fix ammonia from the air in large quantities.—O. J.

† Johnson on Manures, 8 vo., sent by mail for 75 cts.

For the American Agriculturist.

Annual Cost of Keeping a Horse.

Few farmers keep accurate accounts, or have any idea of the expense. Those who make a business of carting and have to purchase all their food, have the means of exact knowledge in their hands. Experiments conducted on a large scale, give the most satisfactory results, as they give a fairer average for single horses.

The Eighth Avenue Railroad Company in this City keep about six hundred horses, weighing on an average eleven hundred and fifty pounds, and consuming daily ten pounds of hay and eighteen pounds of grain—a mixture of corn and oats, ground. With hay at a cent a pound, and the mixed meal at the same price, the daily cost of each horse would be twenty-eight cents, making $1.96 per week—equal to $102.20 a year. The price of hay varies from ½ to 1 cent a pound in this City, rarely getting above the latter quotation. The price of corn and oats is as often above as below 1 cent a pound. The Third Avenue Railroad Company keep eight hundred and eighty horses, of the average weight of eleven hundred pounds, which each consume nine pounds of hay, and seventeen pounds of grain. This would make the cost of keeping twenty six cents a day, or $94 a year. The Sixth Avenue Railroad Company keep five hundred and thirty horses, of the average weight of one thousand pounds, which average about six and a half pounds of hay, and fifteen and a half pounds of grain. This would be twenty two cents a day, or $80.30 a year. The horses on these roads travel from eighteen to twenty miles a day, and keep in good condition on this fare. It would seem from these figures that it costs twenty two dollars more a year to keep a horse weighing eleven hundred and fifty pounds than one weighing a thousand. Of course a farmer who wants a horse only for the road, and for light loads, should keep a light animal. For many kinds of business, a horse weighing nine hundred pounds is just as good as one weighing twelve hundred, and the extra three hundred pounds will cost not far from forty dollars extra. In those parts of the country where hay and meal are cheaper than here, horse keeping will of course be less.

For the cost of keeping in the country we know one gentleman owning a span weighing 1,000 pounds each, who estimates the weekly cost at three dollars. Another, with horses weighing 1,100 pounds, estimates the cost at three dollars forty cents per week. Another with a pair weighing 1,250 pounds each, at the same weekly cost. Another, with horses weighing 1,000 pounds each, estimates the cost of keeping at three dollars forty six cents a week. This last would be twenty four cents and a fraction a day, a medium between the extreme cases in this City. These cases are taken from Eastern Massachusetts where hay and grain are rather higher than with us. The estimates are for horses worked every day at severe labor. Where horses stand in the stable and are worked but a part of the time, or where they run in the pasture in Summer, the expense will be considerably less. We think it will be found in actually experimenting, that the expense of keeping a horse varies from one to three dollars a week. In all the cases quoted, the food was given by measure, and the fact that the horse kept in good condition, was proof that he had enough. Where a horse has all he will eat, as is often the case, he will consume much more than is necessary to keep him in good flesh. You may safely add a third to the expense of keeping, where a horse is fed in this way. In the omnibus business the average life of a horse is three and a half years; on the railroads it is four years. In the country the average term of service must be at least three times as long. Horses are frequently found twenty years old, and in rare cases thirty years and upward. This short term of life in the City has to be added to the expense of keeping a horse; the longer term in the country makes it cheaper there. One hundred and fifty dollars invested in a horse here, is sunk in four years. There it lasts twelve. EQUUS.

[We acknowledge the receipt of several reports on the cost of keeping horses, giving facts and figures; which will be soon published.]

Value of Dead Animals for Manure.

It is no uncommon occurrence for the farmer, at this season of the year, to have "spare meat" upon his hands. He undertakes to winter more stock than he can carry through in good condition without buying hay or grain, and he does not see the economy of buying food. Some of the stock, unreasonable beings that they are, see the economy of dying, and do it—without consulting the owner. Here a sheep caves in under the wall, or a cow dies in the pangs of labor, from sheer want of strength to bring forth. Here is a dead lamb, ornamenting the fork of an apple tree; there an old horse falls at the manger.

It would be stating the case rather strongly to say that a dead sheep was worth as much for manure as for mutton, that is to say, five cents a pound. The facts might not warrant the statement which we have seen in an agricultural work, that a dead horse well composted was worth twenty loads of manure, that is to say, twenty dollars, though this would come nearer to the mark. Allowing the horse to weigh 1,000 pounds, and the muck and labor to be worth $10. This would make the carcass worth $10, at one cent a pound. It might not be advisable for a farmer to buy carcasses at this rate, while it would pay largely to save every thing of the kind upon his farm, or within his reach.

According to the experiments of Messrs. Payen and Boussingault, three pounds of muscular flesh contain the same amount of nitrogen as a hundred pounds of farm-yard manure. Soluble blood, and salted cod, had the same value. Two pounds of cow's hair, two pounds of woolen rags, two pounds of feathers, two of horn-raspings, were each equal to a hundred pounds of farm-yard dung. They are among the most valuable substances used for manure, according to these experiments. If a half cord of farm-yard manure, weighing about a ton, is worth a dollar, then hair, wool, feathers, etc., would be worth about two cents and a half a pound, and the flesh about a cent and a half, at the same rate.

It is not necessary to attain results entirely accurate to show the economy of saving all these wastes. Above ground they are a nuisance, and a source of disease. Buried, they are lost. But in the muck heap, and composted, they are a source of profit, and pay largely for the labor. We want the crows to prey on grubs and insects, and not on dead animals. We can put these to a better use. Every pound of flesh, rightly used, gives a peck of potatoes. Let them be saved. JONATHAN.

Jonathan's hints are good, but he does not tell what to do with the carcass after we have it. Here is a plan we learned from Mr. Geo. H. Goodwin, of Hartford County, Conn.: The horse is bought as cheap as possible; of course better alive than dead, as a general thing, if he can walk. Four loads of muck or sods are placed in a convenient out-of-the-way place, yet within sight, so that dogs can be watched, and if they manifest too great a regard for the old horse, a well-directed bullet may introduce them to a still closer companionship. Then the horse is taken upon the heap, killed, and the skin removed, which more than pays for the job. Without further ceremony five or six loads of muck and soil are thrown over the carcass, and it is left six months or a year, according to the season, a certain amount of warm weather being necessary, and it not being agreeable to overhaul the heap in the heat of Summer. Then fork it over, throwing out the bones, which will then be well freed from flesh, sprinkle over the heap a peck or two of plaster, and add perhaps a little fresh muck or soil upon the surface; let it lie a month, then fork it over again, and it is fit for use and an excellent manure—worth more than an equal bulk of good barn-yard manure. The bones thrown into another heap, or into the stable manure, to be thrown out again when it is forked over, soon become so rotten that they may be pounded up and used with the manure, or by themselves.

Tim Bunker on the "Horn-Ail."

"What is the matter with your cow, Mr. Frink," said Seth Twiggs, as he leaned his elbow on the barn-yard bars, and looked benevolently at a very spare and hirsute animal, that Jake was milking.

"Can't tell exactly," said Jake, "Guess she's got the horn-ail, or some sich thing."

"I thought the trouble seemed to be in her legs, when she come by my house last night. She walked kind o' totlish," said Seth, knocking the ashes out of his pipe.

"Wa'll that might be. Horn distemper generally affects 'em all over. Had Tucker up here to doctor her last night; he said it was horn-ail."

"What did he give her?"

"He gin her a slice of salt-pork, split her tail, put in salt and pepper, and bored her horns."

"Rather guess there was some squirming."

"Yes, it took three men and all the ropes in the barn to hold the old keow."

"Don't you think horn-ail hurts the milk?" inquired Seth hesitatingly as he relighted his pipe.

"Wa'll as to that, I can't say. It's all the keow we've got, as gives milk, and shouldn't think any trouble in the horns would strike clean threw the beast. Milk is milk, I take it, no matter where it comes from. I never could see any difference in the taste."

"I rather guess milk wont be milk out of that animal much longer," said Seth ominously, and blowing a puff of smoke as blue as his prophecy.

"You don't think she's going to die do you?" asked Jake solemnly.

"The crows have already held a counsel on that animal. Tucker told me so last night."

"The scoundrel! He told me he would warrant her to get well, if I'd give him a dollar for his doctoring."

Two days after the above conversation I was called in to administer upon the carcass of said animal. Jake said he had human feelings, and he could not skin a cow he had milked, and he did not even want to put her in a muck heap. I gave my neighbor due credit for the feelings of tenderness which the death of his cow seemed to call forth. But I could not help thinking that a little more of that tenderness manifested to the animal while living, would have been much more wisely bestowed.

To tell the plain truth, the animal died of starvation, just as many cows die every year in this land of steady habits and Christian civilization. I noticed the cow last Summer, and told Jake he would certainly lose her if he did not give her a better pasture. But he would keep her with his young cattle in the old cow-pasture that has been grazed to my certain knowledge for fifty years, and probably for a hundred, without plowing or manuring except the droppings of the pastured animals, and these were yarded at night. He kept six animals where there was not grass enough for three. They came out of the Winter poor and thin, and this cow having the drain of milk upon her system grew thinner through the Summer. The winter diet of corn buts, bog meadow grass, and salt marsh hay cut short the work of starvation, and fulfilled Tucker's prophecy.

They have a great variety of names for this process of torture in Connecticut, and I suppose in other parts of the country. Sometimes it is horn-ail, or worm in the tail; again it is slink fever, or murrain, black leg, or black tongue, cattle disease, or pleuro pneumonia. It would not do for an intelligent civilized man to see and believe that he starved his cattle to death. Conscience might trouble him, and possibly some of his neighbors might have him before the courts under the statute which prohibits cruelty to brutes. If I were called to judge in such a case it would certainly go hard with the offender. It certainly inflicts more pain upon a brute to starve, than to beat it. The whip upon ribs well lined with fat is a sharp torture soon over. But to keep a cow at the stack-yard through the cold stormy nights of Winter, to give her poor food and not half enough of that is a lingering torment, more cruel than that which the savage inflicts upon his victim bound to the stake. The poor beast can only speak through the hollow ribs, and the bristling hair, and these signs of woe are usually attributed to disease rather than to a lean manger.

This is an evil that legislation will not reach, and I suppose nothing but public opinion will set it right, and that probably not in our day. It would seem that there was no need of losing neat stock under ordinary circumstances. I have kept cows for over forty years, and they have all died by the knife, proving as useful and ornamental in their deaths as in their lives. The starving of animals is so unprofitable, that there is no apology for it. A half starved cow hardly pays her keeping. A well fed one pays a handsome profit.

My recipe for the horn-ail is, one good warm stable well ventilated and well littered, one bushel of carrots or sugar beets daily, hay and water ad libitum, one card or currycomb, and gentle treatment. I have never known this dose to fail of preventing the disease.

Hookertown, Apr. 10th, 1862. Yours to command, TIMOTHY BUNKER, ESQ.

The Best Team for the Farm.

We have three kinds in extensive and very general use in different parts of the country: the mule on the cotton and sugar plantations; horses on the prairies and smooth farms of the western and middle States; and oxen in New-England and on rough uneven farms generally in the Northern States.

So far as the plantation team is concerned, there is little room to doubt that the mule is the best animal. He is more hardy, and will bare that abuse which is inseparable from the forced labor of the South, better than the ox or the horse. Neat stock are short lived in the Gulf States, perhaps quite as much from scant forage as from the peculiarities of the climate. Tradition says that "a mule is never known to die upon the plantation," which is probably a strong way of stating their longevity. They endure the heat as well as the negroes, and are well adapted to slave drivers. It is a question if more mules might not be profitably worked upon northern farms. Most of the mules are raised in Kentucky, and in the States further north, and possibly if there were not so great a demand for them on the plantation they would be more frequently seen upon the farm. Pride probably has as much to do as profit with the general disuse of the mule at the north. He does not look

as well as the horse, has less sagacity and speed, and is thought to be more vicious. It may be said in favor of mules that they thrive on much plainer food, and are strong and swift enough for most farm purposes. They are excellent draft animals. Most of the carting in New Orleans and other southern cities is done by them.

Much has been said upon the comparative merits of the horse and ox, for the northern farm, and each has its strong advocates. Neither can be shown to be best for all kinds of land. In behalf of the ox it is said, that he is slower than the horse, and so is better adapted to carting over very rough roads and woodlands and to plowing land full of stones and roots. Oxen can be used where horses would tear harnesses and carts all to pieces. The ox also is available for beef, when he has served faithfully in the yoke for eight or ten years. A pair of heavy working cattle, in good condition, are frequently worth quite as much for the butcher as for the farmer. The horse in old age is only good to "trade off," or in case of death, for the crows or the manure heap. The slow motion of the ox which seems to be the strongest argument in his favor, must be against him with all progressive farmers. Rough fields ought to be cleared of rocks and stumps so as to make room for the plow, the mowing machine and the reaper. With a farm in the condition in which it can be most economically cultivated, a horse team is the most profitable. Their quickness of motion is a very great advantage, and in the course of the year shows many dollars gain in the saving of time. On the road a horse team travels nearly twice as fast as an ox team. In plowing, a pair of horses will plow as much in two days as a yoke of cattle of the same weight will in three days. The horses also will stand the heat much better.

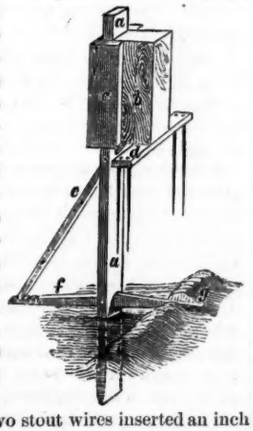
Contrary to the general impression, too, we believe that the horse is more cheaply kept than the ox. Where there is occasion to keep the animals in the stable and to feed with hay and grain, as is generally the case where the teams are kept constantly at work, the horse is the less expensive animal. The experiments to which we have access go to show this. In plowing and tillage the work is much better done by the horse. In turning the furrow over rapidly the soil is broken up more finely and lies lighter, making a fine seed bed. All the tillage necessary for corn and potatoes in clean land can be performed with the horse. He is altogether the nobler animal, and exerts a refining influence upon his lord and master.

Mule Raising.

Whatever may be said of the esthetics of mule raising, there is but one side to be taken in regard to the profitableness of it if wisely managed. Let us look at a few facts. Mules are hardier, cost less to keep than horses, are sold unbroken, and are ready for market the Fall after they are 2 years old. They are driven to market in droves and sold like cattle; that is, the buyer has no recourse, as in case of horses, if he finds the mule lame, foundered, balky, or dead—unless gross deception be practiced, and the price paid is clearly money obtained on false pretences. They are always marketable, having a definite value, and a ready sale, as much so as neat cattle or sheep, and even halt and maimed animals bring a proportionate price. It is not an uncommon thing to hear a man say when remonstrated with for working a crippled mule—"It will out-work any horse I have got." Allow that at two years old, a mule and a colt of like age have cost the breeder the same sum. The mule is ready for market, or nearly so and he is worth 20 to 25 per cent. more than the horse.—Price of mules will average fully 20 per cent. higher than horses. At a year and-a-half old the mule may be put to light work without injury and rather to advantage, and from that time on may earn his own living at least. The horse is salable at 5 years old, but not then unless he is broken. He can not be put to work of any kind much before four years old; and during all this time his breeder has to run the risk of accidents, sickness, bad breaking, and luck in marketing. There are several other important considerations. Many a mare which brings inferior colts will produce mules of very salable quality, and yet the finer the mare, other things being equal, the better mules she foals. Many Kentucky and Tennessee farmers have long used *thorough bred* mares for mule breeding, and their mule stock is exceedingly fine. The excellence of the Jack is not less essential to marked success, though as already stated, any and every mule finds his market and that, too, without "jockying." The Superintendent of the Sixth Avenue Railroad in this City states that in employing mule labor there is a saving of 3 per cent. in casualties, 12½ per cent. in keeping, and 25 per cent. in shoeing. Still, we believe, for some cause the trial of mules upon this and other city railroads, resulted unfavorably to their continued use. Mules are adapted to work on level ground, for they can not hold back well, and except as saddle beasts will never be much used in hilly countries.

A First-rate Mole Trap.

We have received several mole traps, and models of traps, for catching these vermin, among all of which the one represented below appears the most simple and practical. An upright piece (*a*,) 1 x 3 inches, and 2½ to 3 feet long, sharpened so as to be driven firmly into the ground, sustains a heavy oak block (*b*,) attached to it by two wooden clamps (*c*,) which allow it to slide with great freedom up and down. Nailed on the block is a cross-piece (*d*,) 10 inches long and two wide, which has at each end two stout wires inserted an inch apart and made very sharp. The block (*b*,) is sustained in an elevated position by the piece (*e*,) which passes through the upright just enough to catch upon the block when in the position shown in the cut. It is held in this position by the piece *f g*, in one end of which (at *f*,) notches are cut, and the slightest elevation of the opposite end (*g*,) disengages the piece *e*, and lets the block fall. The trap is so arranged that when the block drops the pins will all enter the mole track, which is undisturbed except by flattening it down with the foot even with the surface, just at the point where the end *g*, of the piece *f g*, will come. The block is lowered once or twice so as to be sure that the pins will penetrate the soil without difficulty. The trap is then set, and *g* just touches the ground where it is trodden down over the mole track. The block must have a fall of 12 to 14 inches. The pieces *e*, and *f g*, are each about 15 inches long, and made very light. The slightest lifting at *g*, will throw *e* out of the notch in *f*, and let the block fall. The mole approaching from either direction, raises the ground before him, springs the trap, and the points will most surely pierce his body. Experiments have proved that the best distance apart for the pairs of wires, is 9 inches, letting them enter the ground about 4½ inches from the trip *g*. The block *b* is a piece of rough scantling, with the piece *c*, nailed on. The whole is easily and quickly made. For this plan we are indebted to Mr. W. Norton of Mercer Co., N. J., who has used it with entire success for several years.



A few Hints about Plowing.

For some time past we have been waiting to give in the *Agriculturist*, promised essays on plows and plowing; but those best able to discuss the subject, scientifically as well as practically, are still too busy otherwise, to make the requisite drawings to illustrate the principles, and to go into a thorough treatment of the subject. (We have plowed a good deal of land, and think we could teach some of our readers could we get them with us into the field and teach by example.) While waiting for what we desire to get from others, let us offer a hint or two.

The object of plowing is to break up, to pulverize the soil—*to make it as fine as possible.* That plow is not always the best which will turn over the neatest furrow. To merely invert the surface layer, or shift the position of the soil in masses, or in furrow slices, with the least expenditure of team power, is not the only end to be sought for. Some of the old-fashioned moldboards will often stir the soil better than the newer patterns that show the least strain upon the dynamometer. For sod-land, and where the surface is not pretty clean, it is generally desirable, however, to turn the furrow neatly over. The grass, weeds, etc., being well buried, the pulverizing of the surface can be done with the harrow or cultivator.

Clay soils, or heavy loams, should never be plowed when wet enough to pack, mortar like: the great desideratum is to loosen the soil for the admission of air and warmth. Light sandy soils, on the contrary, may sometimes be benefitted by plowing them when wet.

Very deep plowing is not always advisable, except by subsoiling. The truth is, nearly all soils are poisonous to plants until after they are exposed to the action of air and frost. Many a man—once a skim-plower running the share but three or four inches deep—has got it into his head that the deep-plowing men are right. He goes home, doubles his team, and at once puts down the plow twice as deep as ever it went before. The consequence is, he turns up a mass of *raw* material, and the next crop is nearly or quite a failure. He, and his neighbors, at once eschew all the new-fangled notions, sink back into the old routine, and there is an end to all further attempt at improvements in that neighborhood. But had there been an inch or so of the raw soil turned up for each successive crop, and the tilth been gradually deepened year by year, the evil consequences would have been averted, and in a brief period, five or six years—the plow, the air, and the frost working together—the most happy results would have followed. The roots of the grass, of the corn, of the wheat

and of other crops would have found a lodgement below the temporary surface influence of parching suns, and find access to unfailing supplies of moisture and nutriment.

Fall plowing, to turn up the lower soil, and expose it to freezing and air during Winter, acts like a charm on Spring sowings and plantings.

But by far the best means of deepening a soil, is the use of a *subsoil plow*. This implement is very like a common plow, with the upper and main part of the mold-board cut off; or rather it has a low, narrow, lifting flange in place of the mold-board, so set that it lifts and breaks in pieces the soil. It is run in the bottom of the furrow, following the common plow, two teams being required for the operation. It breaks up and pulverizes the subsoil without turning it up to the surface. This admits air, and after a year or two the subsoil is fitted for being brought to the surface. *Such an operation pays on any soil.* It begins to pay on the first crop, and continues to return a very large yearly interest on the cost.

Mr. Mapes strongly recommends a subsoil plow which he claims to have invented or designed. It is called the "lifting" or "mole" plow. To us this seems the poorest kind of an implement for a subsoil plow. It is like a thin double wedge, with a shaft running up to the beam, and its principal effect is to lift up the soil a little and let it partly fall back, without pulverizing it more than the few cracks made. The common subsoil plow, which thoroughly disturbs, breaks up, and pulverizes the subsoil, is doubtless by far the better implement.

Pumpkins Alone and Among Corn.

Doubtless thousands of the readers of the *Agriculturist* regard the corn field as the only place for raising pumpkins. But, however little the harm that pumpkins do the corn—and we believe that in good seasons they produce a quantity of food which much more than counterbalances the evil which they may do—they will yield a much larger and finer product if planted by themselves. Putting the hills 8 feet apart, two or three good shovelfuls of well rotted manure being dropped on the surface and covered by a little earth, the pumpkins will luxuriate in unobstructed sunshine and upon the fat of the land: and when Autumn strips away the leafy covering under which they hide, a golden harvest will be disclosed which will do one's heart good. Low growing, small stalked varieties of corn do not essentially interfere with the ripening of good crops of pumpkins. But if planted with corn they should in no wise interfere with the thorough culture of the corn. A good plan is to drop seed in every other hill, in alternate rows, and it is very important to secure good seed. The medium sized, round dark orange colored, fine grained varieties are best, and usually the earliest, most prolific, and the best keepers. The cheese pumpkin is preferable for family use or for market.

Field Beans with Corn.

One of the crops used to fill out corn, when it grows scantily, or has altogether failed in hills or spots, is the white bush bean. There is wisdom in the selection. The leguminous and cereal crops are considered so essentially dissimilar in their drafts upon the soil, that they are adapted to follow each other in any rotation. So far as we are aware, experience has not yet discovered that corn suffers essentially, if at all, for having a large crop of beans grown at the same time upon the soil. A heavier draft is, of course, made upon the *soil* if a large crop, be taken off. It is a common practice in some good farming communities, to drop a few beans on the south side of every corn hill having less than three stalks. Another method is the following: The corn being in hills equally distant, in rows running both ways, at the second hoeing, after plowing or running the weeder both ways, plant beans between the hills in the rows running one way. Others plant similarly at the same time that the corn is planted.

Beans cultivated by themselves are a very profitable crop, not exhausting to the soil, and an admirable food for sheep. They uniformly bring a remunerative price, and are sometimes very high and in great demand. They do best on good corn land, not richly manured, in rows 2½ feet apart, kept well weeded and hoed.

Tobacco Cultivation—No. III.

The farmer who cultivates this crop, if he would succeed, must stand ready at all times to neglect every thing else for it. It must have the choice manure of the farm, and when the time comes to transplant, the tobacco must be set, if the weather favors, no matter what stands in the way; then the plants killed by grubs, or those that fail from other causes, must be renewed immediately, and the regular tillage of the soil, and weeding, must suffer no interruption. Soon the worms begin to appear, and as the plants grow they multiply; they find more hiding places, and doubtless more escape the eye of the cultivator. Neglect of them is fatal to success, and the tattered, worm-eaten leaves show a single day's neglect. As the plant approaches maturity, the topping, suckering, and the never ceasing worming, demand of the cultivator unceasing watchfulness and activity; and finally, when the plant is nearly ready to be cut, and day after day adds to its value, up to the very latest time before a frost would ruin it, all hands must be held ready to leave every thing else to harvest the tobacco. The culture is disagreeable work after the plants attain any considerable size, and at all times requires the eye if not the hand of the master.

The tobacco cultivator is subject to one very great temptation, to which if he yield, he permanently damages his farm. The worn-out tobacco lands of Virginia, Maryland, and Kentucky testify to the ruin sure to follow in the wake of the shiftless culture of the weed. Throughout those tobacco-growing regions with which we are acquainted, as a general rule, beside the fine looking tobacco field, stands the half-starved corn. The hill-sides wave with rye, or lie bare in fallows, waiting the revolving cycle when they will again be able to bear a crop of rye or buckwheat. Three-quarters of all the manure made on the farm, and very often all of it, is applied to the tobacco-field, and year after year it is planted upon the self-same plot, and is depended upon as the only source of ready money. As a system of transferring the wealth of the land to the banks, railroad and insurance companies, this works well. The errors of such a system are so patent that it is a wonder any one follows it, but the temptation is great.

When the tobacco crop takes its place in any systematic *rotation*, following some hoed crop, it may be of very great utility and profit to the farmer, and gradually he will be able to increase the land cultivated, and still have manure enough, and not rob the rest of the farm either. Under all circumstances then, we are prompted to ask each tobacco raiser: May you not cultivate other crops with less risk and equal profit, if you devote the same labor and care to them? Lima beans, peas first and cabbages to follow, early potatoes followed by cabbages, and other crops which might be named, are worthy of careful consideration.

But if tobacco is to be raised, by all means do it thoroughly. Early in May, or before, manure and plow deeply, and if any portion of the subsoil is brought up by this operation, apply and work in to the surface a good dressing of wood ashes. The plant demands and withdraws from the soil a large proportion of potash; and besides, this is one of the very best ameliorators of soil which has not been exposed to the action of the air. The manures desirable are: barn yard manure, rich composts of any kind, bones in any form, home-made poudrette, hog manure, etc. Guano is not desirable, except perhaps in very small quantities, as it affects the color of the ash, and perhaps the color of the cured leaf unfavorably. A light dressing of salt or lime, or of both, on the surface is productive of good results, but avoid heavy applications.

The ground thus well prepared as for a corn or root crop, but richer, remains until after the 10th of June when we may expect settled hot weather soon to come. It is then harrowed thoroughly, or lightly plowed, and harrowed, and rolled, marked out in rows three or three and-a-half feet apart, and the first cloudy or rainy day after the 15th of June, the plants are set three feet apart, or even nearer in the rows.

It is the practice of some tobacco cultivators, and on some land it is desirable, to plow in or harrow in about a third part of the manure when the land is worked in June; others set out the plants, manuring "in the hill" with poudrette, superphosphate, etc.; and others make no further addition of manure after the ground is once well prepared as we have described.

Young plants in the seed bed may be brought forward very much by occasional waterings at evening, with weak guano water or other liquid manure.

Hints on Corn Planting.

"One swallow don't make it Summer," and a few pleasant days do not make it corn planting time. Early planted corn is very apt to fail, to rot in the ground, to become the prey of birds, squirrels and mice, to be cut by the grubs, or to be checked or killed by frosts. Corn needs the hot, moist weather of the last of May, or first of June, to bring it forward rapidly and vigorously. The rhyme of some old almanac has grown into an adage,

"See your corn field in May, you'll turn sighing away
But see it in June, and you'll sing a tune."

Or another version of the same idea is:

"Your corn in May will make you pray,
When you see it in June, then you'll sing a tune."

The doctrine often stated that corn makes roots in May, is an error, so far as it conveys the idea that corn will make roots faster or better in cold rainy weather than in warm; but correct if it only inculcates the desirableness of planting so that the corn shall be just breaking through the ground and ready to take advantage of the first hot weather. Corn planted early in May, and struggling for life during the first three weeks of its existence, will be completely outstripped by that which is planted two weeks later. The late planted will be evener, larger, and more productive; and we presume also, just

as early; although in regard to this latter point it is true that an inferior plant will often ripen what seed it bears earlier than one which takes a better hold of the soil, and remains green and growing a longer time. Corn planted north of lat. 41° before the middle of May ought not to be much soaked. There is too much danger of a cold rain setting in which will cause the seed to rot in the ground. But planted during or after the third week in May, it is commonly safe enough to soak it. If it be soaked in water containing blue vitriol, seeds of smut will be destroyed. A good plan is to use common pine tar, (not coal tar,) dissolving a quart of tar to a gallon of warm water, and stirring the corn in the fluid. Then dry it with plaster; a small quantity of lime may well be added to the plaster, to destroy any smut. This preparation is not only a fertilizer, but renders the seed distasteful to crows, blackbirds, squirrels, etc.

Corn planting implements are very desirable, and labor-saving. Billing's planter is one of the oldest and best. It plants corn in hills or drills at distances varying within certain limits, drops a fertilizer in the hill if that be desired, and at the same time plants beans between the hills and without manure, if it be arranged for this purpose. There are doubtless other corn planters, perhaps equally good or better, but with this we are more familiar. It is seldom worth while to plant field corn before the 15th of May, north of this latitude, and at the far north it is seldom possible. We advise planting all varieties of *flint* corn (that is the white, and yellow, or red 8 or 10 rowed varieties which are the common field corn of the northeastern States) in drills so that when finally thinned out, it shall average about one stalk to 10 inches—the drills 3 to 3½ feet or more apart, according to the kind of corn. Manure applied in the hills or drills is often of marked benefit, and very small quantities are often quite as effective as larger. Even soaking the seed in water containing nitre, or nitrate of soda, has a great effect. Stall manure applied on the surface, and harrowed in, is most available to the corn crop, whether the soil be deep or shallow, rich or poor, hard or mellow. On very sandy land, lightly plowing it in, is better than harrowing.

Sorghum Syrup Produced at the far North.

Our call for information in regard to the culture of the Chinese sugar cane above latitude 44° is responded to by a subscriber to the *Agriculturist*, in southern Minnesota, whose experience is instructive. He writes: "I have experimented with sorghum for three seasons. The first year I made eighteen gallons of miserably poor molasses from one fourth of an acre of cane so nearly ripe that about one seed in twenty would grow. The second year I made fifty gallons, good, bad, and indifferent, from half an acre of perfectly green canes, not a seed colored and many seed heads were not in sight. Last year I made of entirely unripe canes, beautiful molasses, needing no 'refining,' at the rate of one hundred gallons per acre. My practice is, to keep everything clean; to grind the canes as soon as cut, and boil the juice speedily, in a shallow vessel; to reject all purifiers, especially alkalies; to remove the green coloring matter which gives the unpleasant flavor, by frequent strainings and thorough skimming. Having ascertained that with the rudest kind of apparatus, *prime* molasses can be made from unripe canes, I intend next season to plant several acres, and procure better apparatus for manufacturing the syrup. At half the present prices of 'sweetening,' it is the most profitable business to which we can apply our industry, here in Southern Minnesota." WM. M. BUNNELL.

Timothy Mowing Lands.

Timothy is a poor pasture grass. That every body knows. The close browsing herd will soon rid a field of it, except in the hedge rows where they can not crop close. The reason of this is not because the root is somewhat bulbous, for we can not understand why that should affect it one way or another, but the fact is that the dormant buds at the crown of the root or the base of the stem need the influence of some foliage to cause them to start. The root alone is very likely to be unable to produce another vigorous shoot, and so it dies, or is greatly injured. Thus it is the very worst policy to let cattle of any kind closely feed down Timothy meadows at any time of the year, and particularly in Spring where the full vigor of the root should go to the unimpeded development of the plant. Timothy appears to receive more of a shock from cutting than almost any other of our common grasses, and almost uniformly makes a poor aftermath. A dressing of manure upon Timothy mowings immediately after haying, seems to counteract this evil. Not only may a good aftermath of Timothy be secured, but all other grasses, so far as we know, are more benefitted by manuring at this season than at any other.

Prepared for the American Agriculturist.

Gleaning in Foreign Fields.

BY ELIHU BURRITT.

Utilizing London Sewerage.—One of the greatest works of modern times is proposed for forcing London to give back to the lands that feed it, some compensation in the shape of fertilizing material. The amount of sewerage it has hitherto poured into the Thames from its subterranean arteries, is estimated at 268,667,090 tuns per annum. Its value, in the diluted state, is estimated at 4 cts. per tun, which would make the whole annual volume amount to over $10,000,000. It is proposed to force this up into elevated reservoirs, at some distance from the city, on each side of the river; each reservoir to be 15 feet deep, and cover a space of from 10 to 12 acres. From these it is to be distributed by a system like that of the Croton Waterworks. Any farmer who wishes to turn a fertilizing stream upon his land, will be furnished with a supply pipe, and a meter, to register the amount he draws from the main, for which he is to pay as for gas or Croton Water, at a certain stipulated price. Should this experiment succeed, who knows but that it may cheapen the price of guano in America, by lessening the English demand for that article.

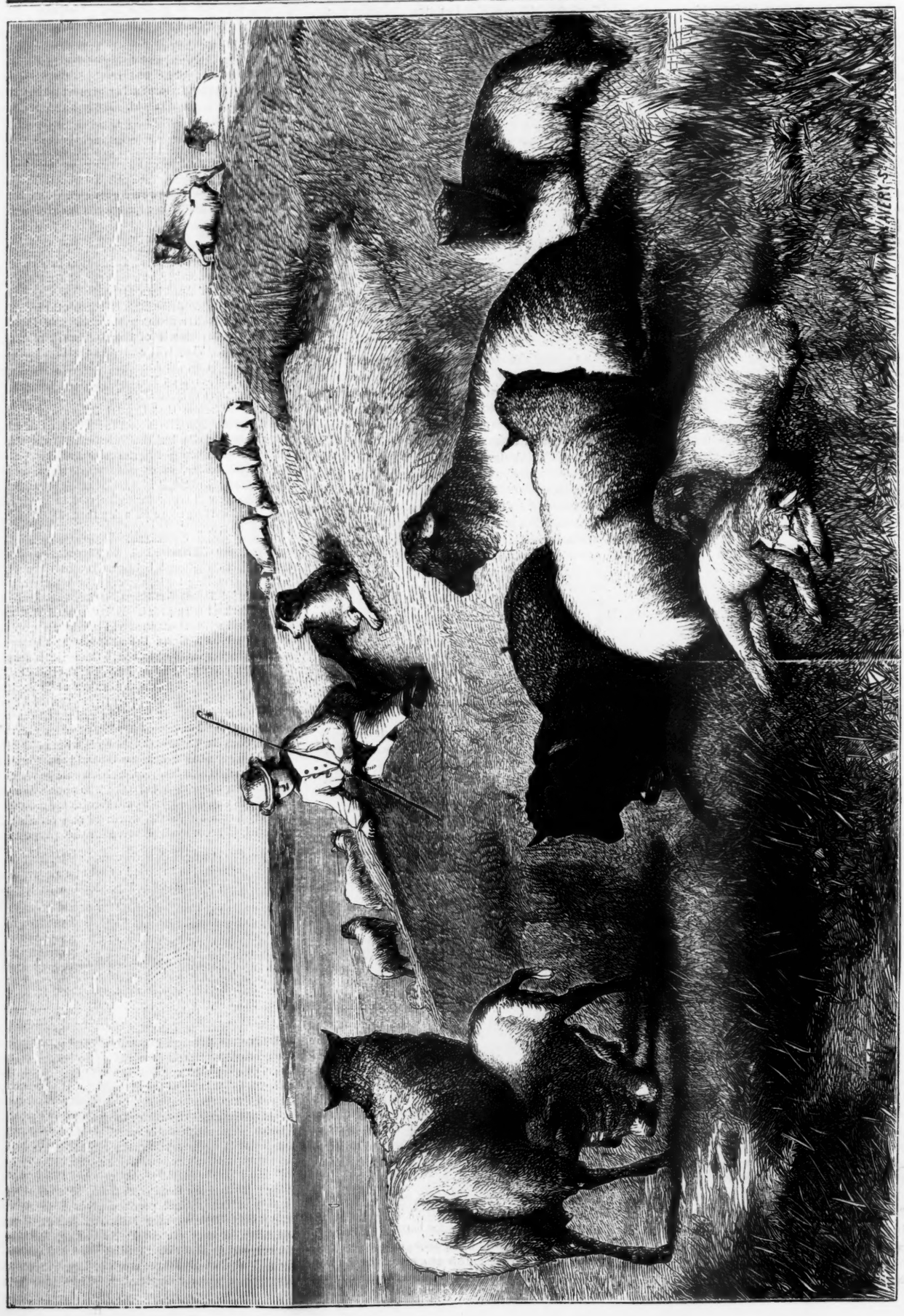
Lecture on Pigs.—(*Illustrated by Specimens.*)—Mr. Stevens, the Prince of the Pig Ring in England, who has taken the highest prizes at the National Exhibitions, recently delivered a lecture on the subject before the Farmers' Club, at Framingham, Suffolk Co. He made a grand *entree* into the town with a procession of ornamental cars, containing living specimens of the White Suffolk, his favorite breed. These were introduced into the hall, and behaved with much decorum, and showed good breeding as well as breed. Specimens of the feeding troughs, and of the pens, were also exhibited. In his address he advised making the floors of asphalte, and keeping the pigs warm and dry, washing and scrubbing them frequently, feeding them with warm food, etc. To prevent the sows crushing the pigs by lying down on them, he placed a railing around the inside of the pen, from 9 to 12 inches high, and about a foot from the wall, so that the pigs could pass between the sow and the wall without any danger of being hurt. To prevent the sow eating her pigs, he had their side teeth nipped out, when they were three or four days old, in case they projected. This put a stop to their biting the sow, and being bitten in return. Mr. Stevens thought he had reached the extreme point of progress, in producing pigs weighing 200 lbs., when five months old. Many an American farmer can tell a larger story than that. Why would it not be a good and proper thing to challenge Uncle John Bull to meet Brother Jonathan in the lists of cattle, sheep, and swine next Christmas? We doubt if he could turn out a bullock in the Three Kingdoms that would outweigh John Sanderson's ox. (And it is a question if *we* can next Christmas.—ED.)

Agricultural Machinery.—Those Americans who visited the Great Exhibition in London in 1851, will remember how meagre, at first sight, was the show of American art and genius, as compared with the contributions of some other countries. They well remember the satires of *Punch*, and the ponderous wit of the London Times, at our expense. They will remember with what supercilious distrust the American Mowing Machine was peered at, even by English farmers; how backward they were even to allow it to be tried on their fields. But, before that Crystal Palace was taken down, the London Times had the grace to admit, that if nothing else but the American Mowing Machine had been brought to the notice of Europe in that grand edifice, its expense would have been well repaid. In 1859, it is stated, that 4,000 reaping machines were at work during harvest, in England, capable of cutting more in a day than 40,000 able-bodied laborers.

Curious Manurial Estimates.—Professors Hembstadt and Schubler recently brought out an interesting table, showing the comparative virtues of different fertilizers, which the farmers might work at with profit. It is assumed that ordinary land without manure will produce a crop of grain equal to 3 times the seed sown; manured with herbage, grass leaves, etc., 5 times; cow dung, 7; pigeon's dung, 9; horse dung, 10; sheep's dung, 12; human urine, 12; human manure or bullock's blood, 14. The last, consequently, is the best fertilizer in the world. It has been estimated that a single individual produces 500 lbs. of urine per annum, which Prof. Johnston shows is worth $50 per tun. A village of 1000 inhabitants would consequently produce 250 tuns in a year, which would be worth, at this rate, more than $10,000. The population of New-York and Brooklyn would furnish annually for country farms $10,000,000 worth of this fertilizing material, *if* it could all be saved for that purpose.

Bee Culture.—Austria would seem, from authentic accounts, to be ahead of all other countries in bee-culture. The annual production, in honey and wax, is valued at $15,000,000. Hungary leads all the other departments of the empire, producing 90,000 quintals (100 lb.) of honey annually; Galicia comes next, with 85,000 quintals; Transylvania, 50,000; while Upper Austria yields only 1,800. The total number of bee-hives is put at 2,733,000; averaging 270 to the square mile. If there were as many cows to the square mile, truly Austria might be regarded a land flowing with milk and honey.

Winter Irrigation in Italy.—This is an operation of great importance to Italian farmers. The right to water their meadows begins on the 8th of September, and ends on the 25th of March. The constant passage of the water over the roots of the grass stimulates the growth, but it also carries off a considerable portion of surface soil, rendering it necessary to make up this exhaustion by manuring the meadows twice a year. Five crops of grass are generally obtained on them in a year. To prepare them costs from $50 to $60 per acre, and the annual produce gives a profit of about $30. Others, near Milan, yield twice this quantity, as they are cut in November, January, March, and April, for stall feeding; and in June, July, and August, give three crops of hay, with abundant pasturage for September. They thus give seven crops a year, and the annual yield is immense.



SHEEP TENDING....FROM A PAINTING BY H. BRITTAN WILLIS, LONDON.—*Engraved for the American Agriculturist.*

For the American Agriculturist.

Spare the Sprouts.

The grafts are set, and the sprouts are starting just below them—the effort of nature to restore the balance between top and roots, that has been destroyed by the grafting process. This balance is of much more importance than most people imagine. In a healthy tree it is always maintained. If important branches are lopped off, sprouts start immediately below to repair the loss. If small branches die, it is an indication of more wood than the roots can support.

In grafting trees of good size, ten years or more from the seed, not more than a third of the top should be taken off at once. The grafts will do much better if the lower limbs are left whole. Buds for new sprouts will start soon after the buds upon the cions, and there is a strong temptation to rub them off upon the supposition that more of the sap will be thrown into the graft. But this philosophy is wrong. Every leaf acts as a pump, and the sap drawn up, other things being equal, will be according to the number and vigor of the leaves. These sprouts should be left until the middle of the growing season at least, and then be removed gradually, leaving two or three sprouts in the case of the most vigorous trees to the second season. If the cions do not grow it is still more important that the sprouts should remain. JONATHAN.

How to Set Trees in an Orchard.

The common way is to set them in squares (fig. 1,) in the intersections of lines crossing the field, equally distant both ways. Thus each four contiguous trees form a square. The trees may be set at any desired distance apart—25, 30, and 35 feet are common distances. The advantage of this method is, that though the ground is not so perfectly occupied as it might be, still it is easier to plow between the rows. When it is desired to occupy the land still more thoroughly, or to place two sorts of trees upon it—one kind to be removed if necessary, as the others grow—dwarfs or other trees are set in the middle of each square, thus: This is confounded with the "*Quincunx*" system, (fig. 2,) in which the trees may be regarded as in *fives*, also: but not in squares. The Quincunx might with more propriety be called the Hexagonal system, for each tree is surrounded by six others at equal distance both from the center one, and each other. By this plan more trees can be set upon an acre than by the other, the distance between the trees being the same. The land can not be so conveniently plowed.

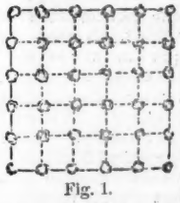


Fig. 1.

To lay out an orchard on the Quincunx system, the following rule may be given: Two distances of rows are required. The *first* is the required distance of the trees, 25, 30, 35, or 40 feet. The *second* is obtained by multiplying the first by 1.732, and cutting off the right hand three figures for decimals. *For example*, if the distance of the trees apart is to be 30 feet, then 30 multiplied by 1.732, gives 51.960 feet, or very nearly 52 feet, the distance of the rows the other way. Now lay off rows across the field one way 30 feet, and the other way, 52 feet, and plant trees at the intersections of the rows. Next draw a second set of rows, *each way*, just mid-way between the rows already planted. At each point where these *new* lines cross, put another tree, and you then have the trees all 30 feet distant from each other, but there are fully one-seventh more trees than if they had been set in rows 30 feet each way. The whole marking out may be done before beginning to plant. The above rule is a general one. If trees are desired 35 feet apart, 35 multiplied by 1.732, equals 60,620, or 60⅝ feet for the distance of the cross-rows. If the distance be 40 feet, the second or cross-rows will be about 69¼ feet, (69,280). The number 1.732 is very nearly the square root of 3, and is a "constant" for all distances of rows.

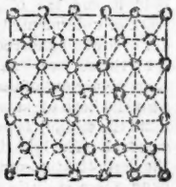


Fig. 2.

About Quinces.

Here is one of the old-fashioned fruits which deserves all that has ever been said in its praise. It is known botanically, as *Cydonia*, from the city Cydon, in Crete, where it seems to have first attracted attention. As a stock on which to graft the apple and pear, it has become quite serviceable, giving the fruit great precocity, increased size and improved flavor. Then, who does not know by experience that its own fruit when stewed, or mixed with apples in pies and tarts, makes a palatable dish? Says an old gardening author: "When apples are flat, and have lost their flavor, a quince or two, in a pie or pudding, adds a quickness to them. In medicine the expressed juice, repeatedly taken in small quantities, is cooling, astringent and stomachic." Quinces, says Colamella, not only yield pleasure, but health. To make a first-rate apple pie, use one fourth quinces sliced with three fourths apples, and add a few thin slices of candied lemon-peel or citron, and more than a simple allusion to the delicious preserves, jellies, and marmalades made from the fruit in its purity, is simply an aggravation.

From the kitchen, let us now go to the garden. The quince may be propagated by cuttings or layers. The cuttings are prepared in the same way as for grapes, they should be set out in a deep, light, well-worked soil; if a little shaded, success will be the more certain. Let the rows be eighteen inches apart, and the plants six or eight inches apart in the row. Keep the ground well stirred during the Summer, and mulched in very dry weather. Layering is much practiced, and is a surer method than by cuttings. Shoots are bent down, slightly cut, and covered with earth. Another method is to earth up the mother plants in the Spring: shoots will spring up from the old stocks, with roots attached.

In setting out the young plants in their final position, place them ten feet apart, and give them the best culture. As the quince is often found wild by the side of streams, it has been supposed by some that it needs a damp soil, and it is often set in the lowest and poorest part of the garden. A mistaken practice. Give it an open situation, a deep soil, and let the ground be surface manured every other year. The fruit will be abundant and large and fair, instead of scanty and knotty, as seen in its wild condition. Bushes well planted, and generously treated, will begin to bear fruit the third year, and will yield good crops for thirty years. First class specimens will bring two cents a piece in New-York market. Few crops are more profitable. The only pruning required is to cut out the old, and twisted or decaying branches. In addition to the manure, give an annual dressing of salt, just enough to whiten the surface.

There are only two varieties extensively cultivated, viz.: the Apple or Orange quince, and the Pear-shaped. The first is the most popular, as it bears abundant, fair, orange colored fruit. The second is shaped like a pear, is dryer and firmer than the other. It does not become as tender, when cooked, as the other, but ripens a fortnight later, and keeps longer into the winter.

(PRIZE ARTICLE.)

The Apple Orchard.

BY ISAAC HICKS, NORTH HEMPSTEAD, N. Y.

It is generally admitted that, in all the older settled parts of the country, apple-trees do not flourish as well as when the soil was new and not exhausted by repeated croppings, with a scanty return of manure to compensate the loss. Unless we fully determine to have an orchard that will remunerate both in profit and pleasure, and to which all other crops are a secondary consideration, we had better not undertake the business. The orchard is to be a *permanent* institution, at least for a life time. The best field on the farm is just the place for it to ensure the greatest results; and if it can be located near the house too, so as to be easy of access, all the better; for then it will receive more of the owner's attention and much labor will be spared in traveling to and fro for fruit—especially for Summer apples, which I recommend to be planted in the part of the orchard nearest to the house. A sheltered position from the northerly winds, with a forest, hedge, or hill in the rear, will often save part of the blossoms from frost and prevent the fruit from being blown off and lost. Generally a southern slope is best, and if nearly level and free from stones, it will be worked with greater ease. It is not to be expected that all these advantages can be secured by every one, but secure as many as you can. A medium soil that is not dry and sandy—parching up in the Summer drouths—nor too wet, in which water stands part of the year, but on which corn and potatoes flourish in perfection, is as near right as can be selected. And if we plant an orchard succeeding one of these hoed crops, the ground will be in the very best condition for transplanting. The finely worked soil is nicely adapted to filling in around the roots, and enables the rootlets to extract their food with ease, which they can not readily do if the earth is in a lumpy and hard condition. It is so important to have the ground in the best condition before planting, that it is better to defer the work until the ground is ready, than to plant in a stiff sod or with wheat, rye, barley, or oats on the ground. If the soil is light and sandy, make the holes twice the usual size and fill up with loam and sods if practicable, and spread a mulch for a distance of two or three feet around the tree to protect it from the scorching rays of the sun. On the contrary, if too wet, or if water stands on the ground, or if the subsoil is a heavy clay, it should be thoroughly drained before planting. If planted in a soil where each hole is like a miniature cistern, it is evident that the tree can not grow. It is recommended, in some wet soils, to place the tree on the surface and cover it up leaving it to grow on a small hillock. This is only admissible where soils can not be drained successfully, for the trees will not take good hold with their roots, and are more liable to be torn up by the winds. The practice of placing trees in little hollows, with the idea that they will catch the rain and be more moist, is erroneous, for repeated plowings in a few years fill up the holes, and the trees cease to grow from being set too deep in the earth. Apple trees send their lower roots deep down in the soil to absorb moisture from thence, and other roots rise near the sur-

face for air and food. Hence if these roots are too low in a wet, cold soil, the tree is robbed of part of the important elements of growth, it dwindles away and prematurely dies. Tenfold more trees are planted too deep than not deep enough, and if too deep at first they soon become more so, as most cultivators will plow more furrows towards the tree than away from it. Subsoiling before planting will be of advantage to almost all soils.

SELECTION AND PREPARATION OF TREES.

Every purchaser should, if practicable, make his own selection of trees to be planted, and not trust to the promiscuous collections of a tree peddler of whose knowledge or fidelity he has no assurance. Trees of the same kind vary much in the nursery rows; some are worth double as much as others for form and thriftiness, and if the purchaser attends to it himself he knows what he is getting. In purchasing largely at the leading nurseries a discount of ¼ to ⅙ can be saved from the prices asked by peddlers. Trees of healthy growth, with well formed heads, good roots, and true to name (a very important item), will, in after years, save much labor in pruning, give more satisfaction always, and amply repay the extra labor and expense in procuring them. Four or five years from bud or graft, if they have not been forced ahead too fast, or where it is no great object to save freight, from 7 to 8 feet in hight is, I think, the proper size; but if they have to be conveyed a long distance, smaller and younger trees will be preferred. Before planting, cut out all superfluous branches and twigs, leaving three or four main branches to form a head. If the tree has fine roots, with a few main ones as braces, the top will require little or no cutting back. The top must be in proportion to the amount of roots. The buds of the previous year's growth give much larger leaves than older wood, we therefore cut but little off unless the roots are scanty. As the larger roots of trees are almost always cut off roughly by the spade in digging, their ends should be trimmed off smoothly before planting; a mass of small roots will spring from the end, much assisting the tree in its hold upon the ground. It should always be our special care to secure the most roots possible upon the trees we purchase, and to have them in the best order, for the after growth much depends upon this.

PLANTING.

There are two methods of planting, one the regular square in which the trees should be 30 feet apart, and the other called quincunx, or 5 to the square. The latter gives more trees to the acre; they will be 27 feet apart. Some varieties form much larger and wider spreading heads than others, and if the cultivator will take the pains to ascertain the manner of growth of the kinds of apple trees he plants, the distance between the trees may be varied somewhat to advantage. After the distance is staked, if the ground be mellow, mark it out with a plow each way, and plant the trees at the intersections. If in the quincunx form, mark 20 feet each way and plant at every other crossing of the plow. Having made our selection and marked out the ground, we proceed to dig the holes for their reception so that they may be planted with as little delay and exposure as possible. For although the apple is a very hardy tree, drying and exposure to cold winds will check their leafing out and their growth the first year. Dig the holes about 3 feet across, taking out the surface soil and keeping it separate from the subsoil. Two spades in depth is sufficient; then the sods, if there are any, and surface soil should be thrown in until the tree can be placed at the same depth it grew. Next throw in good friable surface soil carefully around the roots, placing them in the same position they originally grew, and gently shake the tree sidewise. A few minutes' attention to the proper placing the roots, working the earth between the roots with the fingers if necessary, will pay for the trouble. Lifting the tree up and down like churning is not a good practice, as the dirt falls in at the end of the roots, misplacing them in an arching manner. To insure a quick growth, the rootlets must have good food in the soil, and hence the necessity, whatever the surrounding soil may be, that good rich earth should be in contact with them. Well rotted manure or compost may be placed in the holes, but not in contact with the roots, and then covered with soil and firmly trod down. Two persons are needed to plant a tree properly, one to hold it and the other to fill in the dirt. No fresh or unfermented manure should be placed under or around the roots of the tree; always put it on the surface. As we need more surface soil than we dig out of the hole, it may be taken from near the heap of subsoil, and when the planting is done the subsoil is put into the hole made by its removal. The best time for transplanting is when the best attention can be given to it. If properly done there is little difference between Fall and Spring. Probably the tree is more likely to live if there should be a drouth the succeeding Summer, and its growth be greater, if planted in the Fall. But there is, in ordinary seasons, almost no risk of apple trees living unless grossly neglected. When trees have been brought from a long distance, it will be better to wet them previously, dipping them into water or pouring water in the holes when planted. If the ground be kept mellow by frequent stirring with hoe, plow, or cultivator, no better mulch can be given the young tree through the season. There is nothing equal to frequently stirring the surface to enable a tree to withstand drouth. [If the root fibers are not touched or disturbed. ED.] But where this can not be done owing to the trees being planted in a grass sod, or among the cereal grain crops, a good mulch of anything that will prevent the moisture from evaporating will be of service. Hay, straw, cornstalks, old weeds, shavings, and leaves, are all good, and it is much better at all times to throw refuse rubbish around trees for a mulch than to burn it up, doing good to no one.

Trees will require more or less pruning until they are grown. We should go over them every year. Spring is the time when most persons have leisure, and if the growth of the tree is properly watched, few or no large branches need ever be removed. The head of the tree should be kept so open that a person can climb up and about without difficulty, and every year as the trees increase in size we may find small branches or shoots which need removing. While the trees are young no tool is needed but the pruning knife. But as they grow out of reach, a saw with the teeth reversed so as to cut with a down stroke and fixed on a long handle is the most convenient. There are many different tools for effecting this object for sale at the agricultural stores, but when one of these can not be procured, a substitute can be made by taking the handle from a common back-saw, the smaller the better, filing the teeth reversed, and fastening it to a pole or hay-fork handle. As to the time of pruning trees, some advise to cut when the knife is sharp. When the limbs are quite small, the best time to trim is whenever we perceive it to be needed. Large limbs heal over much better if removed very late in Spring or early in Summer, and if smoothed over with a knife, they will be covered with new bark in half the time. It is a matter of individual taste whether to trim high, so that the plow can always be run under the boughs, or low, drooping their branches to the ground. Both ways have their advocates and advantages. Many kinds of apple trees, like the Bellflower and Rhode-Island Greening, have such a tendency to droop, that to remove the large branches to prevent it would be a serious loss. For it is seldom that a large branch heals over readily, before the wound decays to the heart. There are some varieties too that scarcely ever droop their branches. Probably the best method would be to keep such trees by themselves, and allow the others, when large, to bend their limbs to the earth, as grass can not grow under such trees, and the ground is, therefore, always mellow.

An orchard, especially before the trees have attained the full size, never should be allowed to be covered with a stiff Timothy or red-top sod. In many parts of the country the injury done to orchards by grass is more than the value of the hay to the farmer, and he had best never undertake to have an orchard, if such is to be his practice. The roots of grass and the cereals, of which rye appears to be the worst, rob the young fibrous roots of their needed food and moisture. All hoed crops are best, and it would be better to alternate them, as potatoes, turnips, etc., one year, and corn the next. When the trees are too large to allow the planting of potatoes to advantage, corn for fodder and occasionally buckwheat may be sown. And when the trees nearly cover the ground, coarse manure should be occasionally spread on the surface and lightly plowed under in the spaces where a plow can go.

But this, as well as the amount of manure required, must be left to the cultivator's judgment, for the amount of nutriment in the soil adapted to the growth of trees varies greatly in different localities, but we know, if the ground be kept sufficiently rich by manuring to grow good corn and potatoes, the trees will get their proper share of it. Trees *may* be forced too much, and become weak and decay prematurely, although it very rarely happens from this cause. An occasional top-dressing with ashes will be beneficial—chips and dirt from the wood-pile, straw, corn-stalks, or any refuse vegetable matter may be advantageously thrown under the trees when the plow can not be used.

WHAT VARIETIES TO CULTIVATE.

A very important question is: What varieties shall we plant? It costs no more time or money to raise the best than the poorest apples, and it is a question of some moment to the orchardist whether or not his trees bear apples that will return $5 or $1 per tree annually. There is no doubt that we have varieties enough now suited to each locality, did we only know them. Fruit growers are all aware that a superior variety in one part of our widely extended country is sometimes worthless in another section, and that, as a general rule, those varieties originating in any particular locality are best adapted to the soil and climate of that section. Again there are a few kinds that are deservedly popular nearly every where. Every person designing to plant an orchard should investigate the subject long enough to have a list prepared of those varieties that are adapted to his ground, before he goes to the nurseryman or agent. Nurserymen seldom cultivate an orchard; and as their information is gathered from many different and wide-spread sources, they may honestly recommend an apple to be excellent when it really proves quite an inferior fruit in the place the purchaser resides. Neither can this knowledge be reliably acquired from books, unless the authors describe what are good in each locality. Fruit books are most reliable too in describing the habits and character of fruits in the section of country in which the author resides; as for instance, Elliot for the fertile States of the west. Thomas and Downing for the middle States, and Cole for New England. In the early days of fruit culture many varieties of apples were brought from Europe, but with few exceptions, such as the Gravenstein and Red Astrachan, we now have far better varieties to cultivate originating in our particular sections. The best reference for the inquirer or reader will be found in the lists made out for the *Agriculturist* last year, by 77 different cultivators of fruit in various sections of the United States; and if a selection is made from those that received the largest number of votes, one can hardly go amiss. [See abstract of that list in another column.—ED.]

SUMMER APPLES.—*Early Harvest*, the most popular early tart apple throughout the country, is a slow grower and has the reputation of being short-lived. It should have the best soil and care, or the cultivator will be disappointed in its quality. The *Red Astrachan* is one of the very few foreign apples worthy of cultivation here. A very salable fruit, good bearer, but moderate growth. The *Early Bough* is a fine grower and bearer, and by some preferred as the best tart early sort. *Summer Rose* is excellent, but too small and a slow grower. *Summer Queen* is a good grower and profitable variety. *Summer Hagloe*, slow grower, handsome and profitable for market. Of sweet Summer apples the *Sweet Bough* is the most known. It is a good grower and bearer. *Golden Sweeting* is a better grower and more productive, not as good as the preceding for the table, though profitable for market. *Summer*

Paradise, large and straggling grower, and fine apple.

FALL APPLES.—I place the *Gravenstein* at the head of the list. It is a fine showy fruit-tree, an upright thrifty grower, and good bearer, and very salable. *Maiden's Blush* is another pretty sort, and excellent for the table—far better than Hawthornden. *Am. Summer Pearmain*, a superior dessert sort, good bearer, but slow grower, needing a rich soil. *Porter*, a highly esteemed Fall apple, and when not too many on the tree, large and excellent. This is a very salable variety and the tree makes a beautiful growth. The *Rambo* is a fine apple in most places, but fails entirely in others. *Fall Pippin* is a fine old variety, but too uncertain for general culture—some years very fine, and again nearly worthless. Among sweet Fall apples the *Autumn Bough* deserves a place. It is a good grower and productive, excellent both for the table and baking. I have found the *Willis Sweeting* the best baking variety, and when fully ripe fine for the dessert. It is a good grower, and the fruit is in use longer than any other Autumn variety. *Jersey Sweeting* is a better table apple than the preceding, but not as valuable in any other respect. *Corlies Sweeting* is a very thrifty grower, and is a good baking variety. *Lowell* is a fine grower, and is held in much esteem. *Fall Orange* is a strong grower, and bears very early; the fruit is excellent for stewing and dessert.

WINTER APPLES.—The *Baldwin* appears to have the highest reputation of any Winter apple growing in this country. It is a beautiful thrifty grower, and bears abundantly a rich fine fruit. Its nearest rival, the *Rhode Island Greening*, perhaps is more extensively planted than any other, and adapts itself to nearly every soil, and few need hesitate to plant abundantly of this fine old variety. Among the late keeping sorts the *Roxbury Russet* has the highest reputation. This is a good grower, and bears well. The *Hubbardston Nonsuch* is a large, beautiful fruit, and ripens in the early part of Winter. The tree is a fine grower, and abundant, regular bearer, an excellent, very salable fruit. *Peck's Pleasant* is a profitable variety, resembles the Newtown Pippin in shape, a better grower and bearer, but not its equal in keeping or flavor. The *Esopus Spitzenberg, Northern Spy, Newtown Pippin, Bellflower, Swaar, and Vandervere* are most excellent varieties, when perfect. They succeed well in some localities, but are not adapted to all soils and climates. For sweet Winter apples I recommend the *Talman Sweeting* as a fine grower and abundant bearer; the *Ladies Sweeting* is a beautiful spicy fruit, and abundant bearer, but it is not a fast grower; the *Moore Sweeting* for its long keeping and excellent baking qualities; and *Pound Sweeting* for a large sized, productive, and salable variety.

Undoubtedly there are sorts of apples not named in the above lists better adapted to certain localities and soils, and we can not too urgently insist on the importance of those intending to plant an orchard, acquainting themselves with the kinds that have succeeded in their part of the country, and planting very sparingly if at all of those kinds that are unknown, however highly recommended they may be. The experience I have had fully justifies me in giving this advice to others, for many unprofitable trees of varieties good in some places I have been obliged to regraft. The proportion of Summer, Fall and Winter kinds that should be planted depends upon the purpose and locality of the orchard. If for market chiefly, and accessible to a large city, large and showy early apples are the most profitable, either sweet or sour. And if too great a distance to send Summer and Autumn apples to market with safety, large, prolific and well known Winter varieties should be selected. The red apples bear carriage best, as they do not show bruises like light-yellow or white apples, and appear to greater advantage when exposed for sale. Red Astrachan, Gravenstein, Summer Pearmain and the firm yellow Porter, appear well after a long journey. The marketman cares but little for the flavor or name of the fruit, provided it looks well when he receives it. When the orchard is intended chiefly for family use, beauty is not of much value, and smaller, high flavored and delicate apples will be most desirable. A few large coarse apples for stewing, may be allowed, but as a general rule fine flavored, tender fruit, is best for the culinary department too. Early apples seldom retain their flavor or good appearance long after they are picked, and the trees should be frequently visited either for market or for home use.

KEEPING APPLES.

Apples will keep better, if picked a little before they ripen or fall from the tree in Autumn. They should be kept in as cool a temperature as we can find above the freezing point, subject to as little variation as possible. After they are picked in the Fall, place them in a cool dry cellar with a free ventilation of air through it. They should not be covered up nor the barrels headed for two or three weeks after they are gathered, as they must sweat or throw off part of their moisture; if this is checked by close covering, a portion of the fruit will soon decay. If a proper cellar with good ventilation be not accessible, they may be placed on the back side of a building, as liable to vary least in temperature, or in a cool dry room. Those that fall from the tree before the time for picking, and all bruised fruit, should be kept from the sound apples. Various methods have been proposed for keeping apples, such as covering with dry sand, paper, sawdust, etc., but if placed among the fruit before they have sufficiently dried by sweating, they are productive of more harm than good. And no doubt this is the cause why some have succeeded, and others have failed. They did not understand this law. Pears, if placed in tight boxes and covered up soon after picking will ripen, and consequently decay much sooner.

Of the insects that are injurious to apple trees, the orchard or tent caterpillar makes its appearance earliest in the Spring. The female lays her eggs in the Summer, in a circle around the twigs, and if the trees are small, the most expeditious way is to examine the trees in Winter or early Spring and remove these collections of eggs. The eye will soon learn to detect these gummy, dark looking rings, and if destroyed before they hatch, much damage may be saved to the trees when first leafing out. Never let them remain on the tree until grown, as they will prepare much more trouble for the cultivator the succeeding year. If faithfully kept down from the first there will be little trouble afterwards. A pole with nails driven in the end with cloth tied around, or a stiff hair brush inserted in the nest early in the morning, and twisted round, will easily remove them. The injury done by the worm of the apple moth is not so easily prevented. Allowing pigs and cattle to run in the orchard, and eat the fallen fruit, or picking them up frequently and feeding them to the pigs, which is better, will reduce their numbers. For the apple tree borer, there can be no surer remedy than often inspecting the trunk of the trees near the roots for their holes in Autumn, and inserting either the point of a knife or sharp wire ferret out and destroy the enemy in his hiding place. Keep the bark smooth by proper culture, washing with strong soapsuds, or a weak solution of sal soda mixed with wood ashes, if mossy. A little time frequently devoted to careful inspection of the orchard will pay as good if not better interest than any other labor on the farm.

PLOWING ORCHARDS.

Always have the best and most careful plowman perform this business. Oxen are the best, no doubt, but as all farmers do not possess them, use the most steady horses. Plow alternately one year towards the trees, and the next from them. The good plowman will not allow the plow to run deep too near the trees so as to injure the roots, and will have shorter swiffle trees made on purpose to plow the orchard with. When these conditions can not be all secured, it is safer to prevent barking the trees, to leave two or three furrows nearest them, and afterwards finish with one horse and a short swiffle tree. As injury is often done in harrowing among trees, the driver should have a short rope attached to the harrow, to hold in his hand, so that by a pull he can throw it off, if it inadvertently comes near the tree

Best Apples for Different Localities.

It is now well understood that while there are a few good apples that are vigorous growers, and prolific bearers all over the country, yet as a general rule there are varieties which are peculiarly adapted to only limited sections, and in these localities such apples are the best for general cultivation. As the readers of volume 20 remember, we made an effort last year to gather the opinions of competent judges in regard to the best apples. Seventy seven lists were received, most of them from distinguished pomologists, horticultural and agricultural societies, etc. The reports were published in detail in the *Agriculturist* for April, May, and June, 1861. For convenience of reference, and for the benefit of new subscribers, we present below a condensed table of the votes of preferences expressed in the whole country, and by sections:

	Votes given in						
	From the whole country.	" New-England.	" New-York.	" N. J., Pa., Md., Del., Va.	" Ohio, Indiana, Mich.	" Wis., Illinois, Iowa, Utah.	" Missouri, Ky., Tenn., Minn.
Number of lists received	77	17	17	13	16	9	5
Summer.							
Early Harvest	65	14	17	9	12	8	5
Red Astrachan	48	15	13	7	6	6	3
American Summer Pearm'n.	14	—	4	4	—	—	1
Carolina Red June	11	—	—	—	2	4	1
William's Favorite	10	7	—	—	—	—	—
Early Strawberry	9	—	3	—	—	—	—
Summer Queen	6	—	—	—	4	—	—
Summer Rose	6	—	—	—	4	—	—
Early Joe	5	—	4	—	—	—	—
Benoni	5	—	—	—	3	—	—
Keswick Codlin	5	—	—	—	—	3	—
Primate	4	—	3	—	—	—	—
Sops of Wine	3	3	—	—	—	—	—
Sweet.							
Sweet Bough	50	15	16	8	8	—	3
Golden Sweet	18	6	—	3	5	—	1
High Top	8	—	—	—	—	5	—
Autumn.							
Fall Pippin	42	8	14	5	10	3	2
Porter	35	13	11	5	3	—	1
Gravenstein	35	13	13	—	3	—	2
Rambo	29	—	—	7	12	7	—
Maiden's Blush	24	3	—	4	8	5	—
Fameuse	11	4	—	—	—	4	—
Lowell	9	—	—	—	3	—	—
Late Strawberry	8	—	—	—	3	—	—
Hawley	5	—	4	—	—	—	—
Twenty Ounce	4	—	3	—	—	—	—
Smokehouse	4	—	—	4	—	—	—
Fall Wine	4	—	—	—	3	—	—
Holland Pippin	4	—	—	—	—	—	—
Primate	—	—	3	—	—	—	—
Sweet.							
Jersey Sweeting	16	—	7	3	5	—	—
Pumpkin Sweet	7	—	—	—	—	3	—
Autumn Bough	7	—	6	—	—	—	—
Northern Sweet	3	3	3	—	—	—	—
Winter.							
Baldwin	46	17	17	9	—	—	—
R. I. Greening	43	14	15	6	5	—	—
Roxbury Russet	25	11	7	4	—	—	—
Esopus Spitzenberg	20	3	11	—	—	—	—
Yellow Bellflower	14	—	—	—	6	6	2
Northern Spy	14	3	6	3	—	—	—
Hubbardston Nonsuch	13	7	4	—	—	—	—
Rawle's Janet	13	—	—	—	3	5	4
Wine Sap	12	—	—	—	3	4	2
Westfield Seek-no-further	11	—	3	—	4	3	—
Golden Russet	11	—	—	—	—	—	—
Smith's Cider	10	—	—	6	3	—	—
King of Tompkins Co.	10	—	6	—	—	—	—
Peck's Pleasant	9	6	—	—	—	—	—
Newtown Pippin	8	—	3	—	—	—	—
Swaar	7	—	4	—	—	—	—
Jonathan	6	—	—	—	—	—	—
Rome Beauty	5	—	—	—	3	—	—
Fornwalder	5	—	—	4	—	—	2
Limber Twig	4	—	—	—	—	—	2
Belmont	4	—	—	—	5	—	—
Ridge Pippin	3	—	—	3	—	—	—
Pryor's Red	3	—	—	—	—	—	2
Sweet.							
Talman Sweeting	24	—	10	—	3	6	—
Ladies Sweeting	21	9	6	4	—	—	—
Broadwell	3	—	—	—	5	—	—

It will be seen that only three or four kinds received even a majority of the whole votes, and that in the different sections of the country, the preferences were considerably varied. Thus of Autumn apples, while 14 out of 17 authorities in New-York voted for the Fall Pippin, it received only 10 out of 16 votes in Ohio, etc. Of the Winter apples, the Baldwin received 17 votes from 17 authorities in New-England, and the same in New-York, while it received no votes at the West; the Yellow Bellflower stands highest there. These votes were from such good authorities that the above lists may be taken as a very fair indication of what are the *best* varieties of apples in the different sections named. A large number of the varieties were recommended, but we omit all that did not receive at least two votes. Each authority gave a list of the best six Winter apples (including 1 sweet,) five Autumn varieties, and four Summer varieties. The table gives the total number of votes for each variety—single votes being omitted.

Beautiful Leaved Plants.

All over the world, the lovers of flowers and those who cultivate beautiful plants for the sake of their beauty alone, are now bestowing especial attention upon that large number of plants whose beauty consists in the various tints upon their *foliage*. Especial value being attached to brilliantly variegated leaves, plants exhibiting a tendency to sport in this way are encouraged in various ways to do so, and thus the number is rapidly multiplying. But these unnaturally variegated plants have generally a sickly look, and in fact many are really diseased, while those painted by Nature's hand exhibit a boldness and variety of coloring really startling. Our engraving shows as well as it can be done in black and white, the figuring of the *Sonerila margaritacea*; but beautiful as the cut is, it gives but a poor idea of the real beauty of the plant. The leaves are brilliant green, shading off in stripes into light yellowish green at the points and edges, and covered with pure silvery white dots arranged in rows. The under part of the leaf is light colored, with the veins of a brilliant red, as are also the leaf-stems, and the stalk. It is a native of Java, was introduced into England in 1848, and requires hot-house culture Winter and Summer. It is propagated by cuttings, and has pleasing rose-colored flowers. This beautiful little plant is only one of the multitude of beautiful leafed plants of which we often have something to say in the *Agriculturist*, but we know of none which so well admits of being represented in a wood cut. The beautiful *begonias, draceenas, calladiums, crotons, Cissus discolor*, and others, which are of easy culture, are becoming very common, and are among the most striking green-house ornaments. Besides, we have some *native* plants of great beauty of foliage which may well claim a place with these rare exotics. What is prettier than the ribbon-grass? A variety of the lily of the valley is beautifully striped, and not only do some kinds of ivy show light-colored veins, but some are variegated in white blotches very peculiarly. The horse-shoe geraniums are very brilliantly and regularly colored, as are also many other geraniums.

SONERILA MARGARITACEA.

May-Day Talk About Evergreens.

NEIGHBOR.—Good morning, my friend. True to my word, I have called for a chat about those conifers. Have you selected your evergreens?

GARDENER.—Havn't found time to write out a list, but have got one in my head. You are prepared to read off one, I see, by the paper in your hand. Please sit down, and proceed now.

NEIGHBOR.—I will do so, if you promise to give me your notes and comments, as I go on. I have given my trees in the order of merit, and have added some reasons for my preferences.

I. *Norway Spruce.* (*Abies excelsa.*)—Placed first on the list, because of its great general excellence. Not so neat, feathery, and graceful as the hemlock, yet easier transplanted, and more rapid in growth. Not so grand and flowing as the white pine, yet more symmetrical, bears removal better, and is more suited to the moderate extent of ordinary pleasure-grounds. It is hardy, more hardy, most hardy. Take it all in all, it is *the* tree for the people. So I think.

GARDENER.—The multitudes raised from seed, and sold every year in all parts of the country, prove its popularity. It makes a strong, coarse hedge, and a good wind barrier for a garden, if it be trimmed a little every year to thicken it.

II. *Hemlock Spruce.* (*Abies Canadensis.*)—Put second, only because it is somewhat hard to transplant, except when quite small. As to its intrinsic beauty, there can be no question; it ranks first among evergreens, native or foreign. Hardy, of course, since it grows wild on the hills in the cold regions of Maine and Canada.

GARDENER.—Right, again. Queen of conifers, is this home-born beauty. I like it none the less for its shyness in transplanting. It is too good a tree to be had without any painstaking. Right glad am I that it won't grow if set out like a fence-post. You didn't mention what a neat emerald hedge it makes. Begin with plants a foot high, cut them back well for several years, and the hedge or screen will be come as impervious almost as the box-tree.

III. *The Pines.*.—And first, the Weymouth Pine, (*Pinus strobus.*) An excellent tree for parks or large ornamental grounds—it may, also, stand near the margin of small yards. The pine foliage is heavier, more plume-like and silky than the spruce. The soft, silvery tinge of the white pine is one of its attractions.—The Bhotan Pine, (*Pinus Excelsa,*) resembles the Weymouth somewhat; but in many quarters it is rather sickly, and can not be highly commended.

The Austrian, (*Pinus Austriaca,*) is a noble tree, with dark, sea-green foliage, holds its color fresh and vivid through the entire Winter, is hardy as the hardiest, and is to be recommended.

The Oregon Pine, (*Pinus ponderosa,*) resembles the last, but is built on a larger pattern. It throws out its ponderous arms on every side, grandly, almost defiantly. In its very long leaves, it resembles some of those California pines which can not be successfully grown at the far north.

The Scotch pine, (*Pinus sylvestris,*) is worth a place in every collection of this family. It seems to be less pyramidal than most of the pines, and inclines rather to an irregular pear-form, with the stem down. As it becomes large, it strikes out into very picturesque shapes.

GARDENER.—You have left out the Corsican pine; but not unwisely, for it proves slightly tender at the far north. The *Cembrian* pine ought to be in every list, however small. It grows slowly, but is very dense in habit, has a fine, glossy green color, and perfectly hardy. There are others, but you have included the best.

IV. The *Silver Firs*, (*Picea.*)—South of 42°, the European Fir, (*Picea pectinata,*) is generally hardy, and very desirable. It has a striking statuesque symmetry. The Siberian, (*Picea pichta,*) has nearly or quite all the excellences of the foregoing, and is hardy further north. Fraser's Silver Fir seems to be a variety of the common Balsam Fir, which most surely will be planted widely.

V. The *Arbor Vitæ.*—The Siberian is confessedly the best member of this family. As hardy as the native, denser than that, of a darker and richer tint, and holds its color better in Winter. The common American *Arbor Vitæ* is one of the most serviceable of known trees. By a little pains in choosing specimens, one can get trees handsome enough for the finest lawn. Then, for screens and hedges, nothing is better. It will grow anywhere, anybody can transplant it, and it can be sheared into any shape. The *Siberian Arbor Vitæ* grows very compact, a beautiful cone, and is every way adapted for single specimens, or to be set in rows as a screen.

VI. *The Junipers.*—Of these there are many varieties. The Swedish is perhaps the best, for a wide range of latitude. The Irish is neater in style of foliage, but slightly tender at the north. The American is hardy, but coarser.

GARDENER.—I wonder the Junipers are not more generally planted. They are particularly well suited to small grounds and to cemetery lots. Their spiry, conical shapes throw them out in strong relief among other trees. But you have forgotten the American Black and White Spruce, and the Red Cedar.

VII. NEIGHBOR.—I intended to speak of them, and of several of the newer conifers which promise well. There is the *Thuiopsis borealis*, which is hardy through Central New-York, and very beautiful. Then, there is *Pinus Lambertiana*, and *Pinus Beardsleyii* and *Picea amabilis*, and *Picea Nordmaniana*, and others which will ere long find a place among standard trees.

GARDENER.—A good list, sir, for an amateur to make out. The latter part of this month is the best time to plant. Good morning; our May-day talk has been pleasant and profitable.

The Flower Garden.

In this merry month of May, the flower garden should *begin* to look attractive. The walks will, of course, be cleaned and the edgings clipped. The double Hyacinths, which have quite heavy flower stems, may break down in stormy weather, if not protected in some way. Wide shingles, set up on the exposed sides, will break off the wind somewhat. But they do not look well. A better way is to provide a bundle of slender, smooth stakes, about eight inches long, and to tie every flower stalk to one of these. Keep the ground loose and work it smooth between all the plants, including Narcissus, Tulips, etc. While the gay show lasts, make the most of it: it is, all things considered, one of the finest in the year, and will not come again under twelve months. As soon as the leaves turn yellow (not before,) cut them off close to the ground. Or, if you are very neat, and can not bear the first sign of slovenliness, as soon as *the tips* of the leaves become yellow, you may lift the bulbs with a narrow spade or a trowel, and set them out temporarily in a retired corner. Then smooth down the borders, and prepare to set summer bedding-plants, or to sow annuals.

But does some lady lament that she has as yet no flower-garden? She has the ground, and seeds, and a few plants. But she wants a little instruction in laying out the borders, and in arranging plants in them. We subjoin a few hints; but make haste, Miss Flora, or the season will get ahead of you. Several months ago, we gave a sketch of a plan worked out in our own grounds, which looks well, and is easily managed.

Fig. 1.

But for those who would like something different, we give another, (fig. 1), a favorite with Mr. Downing, and taken from one of his books. In such symmetrical gardens, it is not desirable to use coarse and tall flowers in any of the beds, as they would hide the others and destroy the general effect. Choose rather the dwarfish plants. For this particular pattern, it would be a good plan to set verbenas in the four outer beds: say, white verbenas in one, pink in the next, purple in the next, and scarlet in the last. In the small, central bed, put a sun-dial, or vase, or classic figure of any kind. An ornamental frame of some sort, with a delicate climber festooned about it, would look well. And perhaps a single row of verbenas or petunias might encircle this central ornament. The twelve other beds may be managed thus: every alternate bed devote to bulbs, set at a reasonable distance apart, so that as soon as the tops of the bulbs begin to wither, showy annuals may be set between them. They will completely cover the bed by mid-summer. Some of the best annuals for this purpose, are: Drummond's Phlox, Portulacca, Sweet Alyssum, Eschscholtzia, Collinsia bicolor, etc. The other six beds may be occupied with the various scarlet Geraniums, Heliotropes, Ageratum, Petunias, Pyrethrum and other bedding plants. These will keep the garden in a blaze of beauty all Summer. The walks of such a parterre should be made of the finest gravel, and always kept clean and smooth.

But some very sensible persons do not like perfect regularity and symmetry. They are picturesque in their tastes, and want their gardens to have a certain free and easy, rambling look. With an eye to the wants of such people, we give the cut fig. 2. This garden, it will be seen, is secluded from the other parts of the

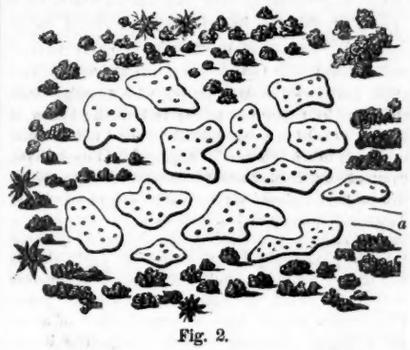


Fig. 2.

grounds, by low trees and shrubs, irregularly grouped. It is entered by a covered walk, seen at *a*. The beds are cut out in irregular patterns, yet so fitted to each other as to leave about the same width of walk between them at all points. The walks may be of gravel laid over a solid bottom of cobblestones, or of smooth turf. If of the latter, the grass must be shorn and rolled once a week, and the verges neatly trimmed. The planting of the beds may be done in a picturesque manner—placing a plant here and there, without regard to size or character—some pains may be taken to assort colors, hights, etc. Quite a pleasing effect is produced by such a garden.

Crinoline Flower Pots.

The Moss baskets, of which an account was recently given (page 20), are exciting, deservedly, so much interest that we present here an engraving of another contrivance known in England by the fanciful name of the "Crinoline Pot." Various kinds of green-house mosses, etc., are used for lining the pots or wire baskets and holding the soil. Among these named are: the procumbent Selaginellas, several Adiantums, Aspidiums, and Aspleniums, *Camptosorus rhizophyllus, Divallia dissecta, pentaphylla, and Fadyenia proifera.* The plants that succeed best in these pots are heaths, ferns, all peat loving plants, and doubtless many others. Plants may be so placed as to protrude from any or all sides and even from the bottom, and, with the moss which clothes the soil, present a mass of beautiful verdure, at times rendered still more attractive by bloom.

Transplanting Tomatoes, etc.

If tomatoes, cabbage-plants, and the like, are "pricked out" several times in the hot-bed or seed-bed, they will become more stocky, and will form a mass of roots which will make their final removal to the open ground an easy matter, and ensure their making a speedy and rapid growth. (By "pricking out" gardeners mean transplanting from a thick bed to give each plant more room to expand its tops and roots, and thus secure a more stocky habit. The roots of plants frequently transplanted are likely to grow in a more compact mass, and endure this final removal better.) While still under the glasses, they should have as much air as possible by day time, to inure them to the atmosphere of out-doors. Just after a shower the ground is wet enough to refresh the roots, and the air is so moist that it does not exhaust the plants by rapid evaporation. But that good shower does not always come at just the desired time; the season is advancing, our plants are full grown, and ought to be in the garden; what shall we do? Do this: provide a number of old boxes, or a few dozen shingles, and have at hand a few pails of tepid water. Having stretched a line, make holes along side of it, where the plants are to stand, and pour a pint or more of water into each, leaving it to soak away. Take up your plants carefully with a garden trowel, preserving as much dirt as possible around the roots, and then set them in the holes, drawing fine soil around them, and covering the stems a little higher than thay stood before. Previous to finishing off, pour about half a pint of water into each hole, and then cover with common dry soil,—though this last watering is not essential. Shield each plant with a box or with shingles from the heat of the sun. The leaves may droop a little for a day or two, but they will revive again, and not a plant be lost. Following this method one can transplant these, and many other plants, whenever he pleases.

Poisonous Plants and Antidotes.

Poison Sumach, Poison Elder, Poison Dogwood, (*Rhus venenata.*) Poison Ivy, Poison Oak, (*Rhus toxicodendron,*) Climbing Ivy (*Rhus radicans*).

The poisonous acrid property of the milky juice of these shrubs is neutralized and made harmless by almost any alkali. When therefore one has been exposed to being "poisoned" by either of these plants, the parts exposed should be washed as soon as possible in a weak solution of potash, saleratus, soda or ammonia water, or even strong soapsuds. A piece of hard soap carried in the pocket to be used as occasion demanded might save a good deal of after torment. White lye forms a very simple and a very complete protection against the poison of Dogwood, or Ivy. It is made, as almost every body knows, by putting a couple of shovelfuls of hard wood ashes into a pail of water, stirring it up well and standing it aside to settle. Before going out to work among Dogwood or Ivy, wet the hands, arms, face, and legs, so far as may be necessary, with the lye and let it dry on the skin. You may now work among the vile stuff without harm. Take care not to make the lye strong enough to injure the skin, the same caution must be observed in the use of the alkalies named above. When the poisonous juice has been in contact with the skin for some time and specially after the inflammation has set in, it may be doubted whether its action can be controlled, the poison must run its course. Indeed if much of the surface of the body is affected, it will be very unsafe to attempt to drive it away. I once met with a case where the eruption left the skin and settled upon the lungs, throwing the patient into great danger of speedy death from congestion of that organ. Very active treatment re-

lieved him from the present danger, but it was months before he got rid of a troublesome and alarming cough which followed. The sufferer must keep cool—live on water gruel—call to his aid all his patience and bear his torment as he best can. A moderate dose or two of Epsom salts will serve to cool the blood and to keep the eruption from running into bad sores or ending in a crop of boils.

K.

The writer adds in a note to the Editor: "I have suffered severely often—and once dangerously from the plants named above, and know from trial and experiment the neutralizers of the poison."

Vinegar—Acetous Fermentation.

The sharpness of vinegar is due to acetic acid which it contains. Its color and flavor, aside from the sourness, are due to the other ingredients of the cider wine, or any thing else from which it is made. Acetic acid is only produced from alcohol, which, absorbing oxygen from the air, becomes acetic acid. Alcoholic liquids will rapidly turn to vinegar if exposed to the air, and the more thoroughly exposed, the more rapidly will this, which is called the *acetous fermentation*, proceed. Warmth also greatly promotes it, and any fermenting body diffused through any liquid containing alcohol causes it to go on more rapidly. Good cider vinegar contains only about 5 per cent. of acetic acid; it is very strong when it contains 6 to 8 per cent, and the best wine vinegar contains only 10 per cent. This renders it necessary where vinegar is transported far, to carry 93 to 95 per cent. of water, and so, of course, it is much cheaper to carry the strong acid and make vinegar by adding it to water at the journey's end. "Distilled vinegar," or acetic acid lacks the pleasant flavor of good cider vinegar and has only the peculiar taste of the volatile pungent acid itself.

When cider is set for vinegar, place the barrels in a warm shed, or even in the open air, on the sunny side of the house, tack some gauze over the bung-holes, to keep insects out, and it will soon become vinegar. The addition of "mother of vinegar," which is a fungus plant (*Mycoderma aceti*), seems to give an impulse to the fermentation, and the same be given by a quart or two of good strong vinegar drawn from the bottom of the barrel; but if the cider has any proper strength, these additions are of no advantage, and if it is weak they are apt to produce moldiness.

For the American Agriculturist.

Hints on the Art of Butter Making.

In order to make pure butter, something is required besides the good breed of cows—the sweet grasses—the soft springs—the rolling lands—and the rich milk, and the most experienced churners—the most improved machinery—the purest atmosphere—the best material may be manufactured into yellow grease instead of butter, unless the process be properly performed. It is a fact well known to scientific dairymen, that the pure butter is *not made by agitating the milk—not made by the process of churning. Butter already exists in the milk*, and the art of separating it from the milk, is that on which the success of the dairy depends.

Butter exists in globules so small as to defy the detection of the eye unaided by the microscope, and the removal of these globules without crushing them, is the delicate and difficult task the dairyman has to do. There is no luxury that comes to the table which is so exquisitely sensitive as butter. If the cow feeds on white clover, the butter has a white clover flavor; if she feeds on cabbages, the butter has the flavor of cabbage; if the butter is kept in the vicinity of the stable, it forthwith becomes tainted with the smell of the stable; if packed away in pine tubs, it catches the taste and odor of the pine. It requires skillful handling or it will certainly be spoiled. If there is too much rubbing in the churn, these fine globules, mashed and crushed against the sides of the churn, will give greasy butter; and if the air is excluded the gases will injure it. What can be done, you inquire, to cause the adhesion of the globules without grinding or breaking them. Experienced churners answer the question, when they caution young beginners not to churn too fast, not to heat the milk too much, not to overdo, etc. They may not in every instance understand the philosophy of the fact, but they do know the fact, that "overdoing" makes grease and not butter. The seasoning of butter is a matter of taste, and there are a great many persons who imagine that the more salt they put in the butter the better it keeps. That is a great mistake. Just enough and none too much is what is required. [Few indeed, even among butter makers in this country, know the luxury of *fresh* butter with no salt at all.—ED.] Too much will spoil the taste and not save the butter. Without penetrating any deeper at present into the philosophy of butter making, I will simply add that, a gentle and uniform agitation of the milk will best reward the butter maker for his pains. [The cream should have a temperature of about 65° F. when churning begins.—ED.] The butter should be kept away from all unpleasant odors, and when put down should be packed in white oak tubs.

Clean cows, clean stables, sweet churns and pans, neat and tidy operators, are among the things desired by those who would send pure butter to market.

GEO. W. BUNGAY.

Grease Spots.

A grease spot on many delicate fabrics is a difficult thing to remove, on others it comes away very easily. When first made, before the fibers have thoroughly absorbed the grease, soap of almost any kind will often quickly remove it; after a few days, a soap of peculiar quality is required. The hardest and whitest is commonly best, and soft-soap is the most powerful, but liable to change the color or weaken the texture of the goods. Turpentine, kerosene, and other carbonaceous liquids, have a great affinity for grease, and dissolve it, but are themselves so difficult to remove from cloth that by their use we are apt to only diffuse the grease over a larger surface. Ether, chloroform, and to a limited extent, alcohol, dissolves grease, and though they do not remove it any better than turpentine, yet they bring it into a condition to be easily washed away by soap and water. On fabrics not injured by alkalies, ammonia water used to wet the spots, renders them easy of removal. Ox gall is a soap of a very delicate, mild character. It will sometimes remove grease, and other spots from silks, and other delicate fabrics, without injury to the colors, when every thing else fails; it is itself easily washed off. Almost any very fine soft substance will absorb grease. The articles most in use and very effective are, potter's clay, French chalk, common chalk. These are scraped upon the spot in fine powder, or wet up to a paste and laid upon it, and then by application of a hot-iron in close proximity, the grease, even though it be wax or spermaceti, is absorbed by the clay and may be washed away, and all removed after a few patient applications. In the absence of clay or French chalk, or on fabrics likely to be injured by them, any bibulous paper (such as will quickly absorb water, like blotting paper) may be laid upon the spot, and a hot-iron being applied, a great part of the grease will be taken up by the paper, and the rest chiefly diffused so as not to be seen.

Cocoanut Shell Hanging Basket.

Miss E. M. Powell, of Ghent, writes to the *Agriculturist:* "A very pretty hanging basket can be made by sawing off about three inches from the smaller end of a cocoanut, removing the meat, and covering the outside with the green, the cup, and the wood mosses. These may be fastened to the shell with a solution of gum arabic, made very thick. I have one containing moneywort (growing in the shell) which droops gracefully over the sides, and a verbena which is now (March 22,) in bloom. These cups or baskets are very easily and quickly made, and they are very beautiful."——[The shell is of course suspended upon a string which may be attached to the upper rim of the cup by means of small holes. Small vines or moss may be trained up the strings. See page 212, July *Agriculturist*, 1861. These ornaments cost little or nothing, and they add much to the cheerfulness of a room. They are as good as medicine in the room of an invalid.—ED.]

Stone Jugs vs. Tin Cans for Fruits.

W. B. B., of Southern Minnesota, writes to the *Agriculturist* thus: "Here at the West, tin cans cost at least 33 cents per gallon, and can be used but once, to which must be added considerable more if you live far from the tinman. The "self sealers" cost 45 cents a quart here! Stone jugs cost only a "York Shilling" (12½ cents) per gallon, and will last for years. On three years' trial we find the jugs preserve fruit better than tin cans. We fill the jugs while standing on a hot stove; and while the contents are boiling hot, close them with a cork or nicely fitting plug of soft wood, covering with melted sealing wax or resin."

[REMARKS.—After using hundreds of tin cans, common and self sealing, we have discarded them entirely, and advise others to do so, on account of the danger there always is of the corrosion of the tin and the production of poisonous salts. Well glazed stone ware, jars, bottles, or jugs, answer well. We prefer glass, however. The dark colored glass is cheap. We use wide necked bottles, one and two quart sizes—mostly quarts—corking while hot, wiping clean and dry, and covering with cement made of one pound of resin with about one ounce of tallow melted together. The bottles are then set necks downward in small tin patty pans, costing a penny apiece, or in old saucers if these be on hand, and cement enough is dipped in to completely envelop the top of the bottle neck. This entirely shuts out access of air. If the bottles be filled with hot fruits, and be corked and sealed while still hot, the pressure is always *inward*, but the tin or saucer covers prevent the cork being forced in by the air. We merely heat the fruits *through* in a kettle, dip them into the jars, or glass bottles of any kind, and seal as above. The experience of two years proves this mode to be the cheapest *and best*. But more full particulars next month.]

About Unleavened Bread.

To the Editor of the American Agriculturist.

I believe it is generally admitted that yeast, cream of tartar, and saleratus do not add any nutritive properties to bread. But it is also as generally believed that good bread can not be made without them. This I think is a mistake. Certainly some of the best bread I ever tasted was made as follows:

No. 1. Take wheat flour (either Graham, or fine,) and pure soft water, and make into a very *stiff* dough, roll out from half to three-fourths of an inch thick, cut into cakes two inches or less square, or round like crackers, prick them through several times with a fork (to prevent blistering), pass them into an oven sufficiently hot to bake wheat bread, and keep up the heat for twenty minutes or more.

No. 2. Mixtures of corn, rye, oats, and barley flour. If any one of these alone, on any two or three of them in almost any preparation, be mixed with pure soft water and baked as directed in No. 1, an excellent bread will be produced.

Bread made according to the above directions and thoroughly dried in the air after baking, or better, in a warm oven, will keep for many months, and lose none of its natural taste or good qualities, especially No. 1. Remember that nothing but water and flour, or meal, not even salt, is added in making unleavened bread; neither is the dough allowed to rise before baking. It rises while in the oven. This bread is not so soft and spongy as fermented bread, yet enough so for persons having good teeth. Those having poor masticators can soak it in water or milk, or in any way that they would use common crackers. If properly prepared, this bread does not loose its *sweet natural taste* by long keeping, nor can it sour, as is sometimes the case with raised

bread. Do not be discouraged if the first trial prove a failure, but try again. It is not uncommon even for experienced bakers to occasionally get a poor batch of raised bread. We made very many trials before we properly understood it. Now we are more sure of good bread every time we bake, than in the old way. E. W. KNIGHT.

Glenns Falls, N. Y., March 4.

REMARKS.—We give the above, not to endorse it especially, for the taste of people generally would require to be greatly changed, before they could be brought to substitute for light nicely raised bread, the hard unleavened water-mixed cakes. It can not be denied, however, that so far as health is concerned, the pure unbolted ground meal of wheat or other grain, is better adapted to the wants of the body than the fine bolted flour. But there is one consideration not taken into account by those who would discard yeast-raised bread. To enter into the blood as nutriment to the body, food must be digested, that is, its chemical structure must be changed, and a new arrangement of its elements be produced, which is equivalent to saying it partly decays in the stomach so that its elements, simple and proximate, may enter into other combinations. The fermentation (raising by yeast) is a step in this decay or destructive process, and it may well be queried whether fermented bread is not better adapted to digestion than unleavened bread. The yeasting, fermentation, or raising of the bread, is so much work done in advance for the digestive organs of the stomach. The baking merely stops the destructive fermentation at a particular point, to be resumed again when brought in contact with the gastric fluid. If this view be correct, sour bread—that fermented to excess—may be quite as healthful as the sweetest. It certainly goes through a souring, destructive process in the stomach, before it gets into the blood as nutritative chyle. So far as health is concerned, those people who habitually use sour bread, from want of skill, or from preference, do not appear to be less healthy, or to suffer more from indigestion than other classes. As for the taste in the matter, that depends mainly upon habit. The writer above has learned to like the hard unleavened cakes, and doubtless enjoys them. Another learns to like the sharp acid flavor of sour bread, and esteems your light sweet bread as insipid. The latter is the case generally with the people of Central Europe.—ED.]

Old Fashioned "Hulled Corn."

"Aunt Mary" of Colchester, writes to the *American Agriculturist:* "Some of the old fashioned ways of using corn, in vogue when wheat flour was almost as scarce and precious as gold dust, are worthy of being called to mind now, especially by those who do not relish corn bread or 'hoe-cake.' Here, for example, is my old and my present way of hulling corn, which furnishes a dish that would have pleased Mr. Smith, and perhaps have made him outgrow his suspenders in half the time mentioned in connection with his picture in the *March Agriculturist:*—Take about as much ripe dry corn as would be shelled from a dozen ears, and put it in an iron kettle, covering it with cold water. Tie in a cloth or small bag about two teacupfuls of good wood ashes; put the bag in with the corn, and boil until it looks yellow, and tastes pretty strongly of the alkali. Take out the bag, and boil the corn slowly in the lye for an hour or so; then pour off the lye and add cold water, and simmer until the corn swells. If the hulls do not then come off by stirring, turn off the water and rub the corn in a clean coarse towel, which will remove most of the hulls. Again add more water and simmer for several hours, stirring often to prevent burning. When it swells out large, becomes softened through, and looks white, add salt to the liking, and let the water cook nearly away. Eat warm or cold, with cream or milk. In cold weather it will be just as good when several days old."—[We agree with 'Aunt Mary' that this old fashioned hulled corn *is* a good dish. Rightly prepared, it is as soft and delicate as green corn in the ear, though it has not the sweetish taste. Unless plenty of water be added to thoroughly wash off the alkali after the hulls are loosened, it will not suit the taste of some persons. The salting is an important part also. Most persons leave it too fresh, though we have tasted it when spoiled with excess of salt. It is a little troublesome to prepare, but is cheap, and good enough to pay for the labor. We wish 'Aunt Mary' was our next door neighbor, so that we could often drop in for a dish of the old fashioned hulled corn, that in our boyhood we considered as one of the greatest luxuries, but which has seldom been met with in later years.]

Corn Bread Questions—Explanations.

Many inquiries are made for *particulars* concerning the various corn bread recipes published in the first three numbers of this volume. We can not answer them; the contributors mostly live at too great a distance to be personally consulted. We published the directions just as given, or with emendations in the words and style only—not in the prescriptions. A few write that they have followed the directions, and yet can not produce good bread or cake, and intimate that there must have been some mistake or deception. We take it that none of the contributors would give directions different from these by which the actual specimens sent were made. A great deal depends upon the skill of the operator in using any recipe. Two persons will often produce a very different article of food, though both try to follow precisely the same directions. Comparatively few housekeepers make every batch of bread from the same barrel equally good, though intending to pursue the same method in each baking.

Pot-Pies.

A good pot-pie is a good thing; heavy, half-cooked dough is poor eating, and hard to be digested, whether cooked in the form of bread loaves, biscuits, or in a kettle. A lady reader of the *American Agriculturist*, whose pot-pies we have proved and approved more than once, writes out the following directions: Make the dough just as for raised biscuits; an egg, beaten and mixed in with the butter or lard shortening, improves the lightness and quality, but is not necessary. When the meat is boiled nearly enough, cut the dough into small biscuit size, and lay the pieces not among the meat, but on a perforated tin placed in the pot just above the liquid; cover and cook them through by the steam. Stir a little flour into the meat liquor and boil it well; lay the cooked crust on the dish and pour over it the gravy and the meat.——(2) Mrs. Lucy Upson, of Pecatonica, Winnebago Co., Ill., contributes the following: "For the crust, use 1 pint of sweet milk, 1 teaspoonful of soda, 2 teaspoonfuls cream of tartar, butter the size of an egg, and flour enough to make dough as stiff as for tea-biscuit. Roll out and cut like biscuit and drop on the top of the chicken, cover and boil 20 minutes."

MEAT FOR POT-PIES.—Tender poultry is of course preferable, when to be obtained; but almost any kind of meat not too fat, answers well. Good veal, and lamb, are next to poultry, but beef, lean pork, or spare-rib, or any kind of lean meat is far from a poor substitute, if the crust be made light.

Salad Dressing.

It is a great art to make a good dressing for green salad—lettuce or endive. The art consists in mingling the various ingredients so that each will become disguised and in its turn disguise the others while the combination in no wise obscures the delicious flavor of the lettuce or endives—but rather augments it and promotes its digestibility....Take the yolks of two hard boiled eggs, crumble them with a silver fork or dessert spoon, add about half a teaspoonful of ground mustard and a teaspoonful of salt, and mix all well together. Then add in three portions a dessert spoonful of pure olive, walnut or poppy oil, and rub the whole to a uniform smoothness. The addition of twice the quantity of oil will improve the salad to the taste of many, and nothing is more healthful; a dash of cayenne pepper, or a few drops of pepper vinegar may also be added; finally add about a dessert spoonful of sharp vinegar, and if the dressing is not fluid enough, a little water or more vinegar, adding it gradually and rubbing thoroughly all the time. A little experience only is necessary, but it requires tact and patience. Most people abhor oil because they pour it over the green leaves instead of blending it in a dressing. Others douse on oil, catsup, mustard, pepper, salt—every spice or condiment they can lay hands upon—sugar it well besides, and then drown it in vinegar. Think of catsup on a crisp lettuce head—horrible!

Greasing a Griddle—The Best Way.

"Letty Ermin" of New-York, writes to the *Agriculturist* thus: The soapstone griddles require no greasing, but the "flap-jacks" are insipid. Too much fat is equally objectionable. The piece of fat pork commonly used becomes blackened and seared to bitterness—disagreeable to the eye, at least. The very best greaser is a linen swab, dipped into nicely tried drippings, or suet warmed, and rubbed quickly over the surface.—This same kind of "swab" of smaller size, is also the best thing for greasing bread pans, and for fitting into the corners and scallops of cake forms.

"Pot-au-feu" Recipe direct from France.

MONTARGIS, France, March 12th, 1862.

MR. EDITOR: Seeing in the January *Agriculturist* an inquiry for a recipe for the French "Pot-au-feu." I send one that is good, and at your disposal. Although so far away from our native land, we think we cannot do without your most excellent journal.

To 1 gallon of water, put 4 lbs. of beef, 3 teaspoonfuls of salt, and 1 of pepper; set it on the fire, and as the scum rises, skim it until clear. Then add 2 carrots, 2 turnips, 2 leeks, cut in pieces; 2 onions, in one of which stick 3 cloves; 1 burnt onion, or other coloring. Boil gently 5 or 6 hours. The broth, with good wheat bread, vermicelli, or tapioca, is good enough for any table. The meat is to be served afterward with the vegetables. E. M. L.

Laurel Leaves, mentioned in a recipe for Pot-au-feu on page 86, are not leaves of "ground laurel," "high," nor "low laurel," nor of any other wild plant called laurel by our country folk, but the common European laurel, or bay laurel, *Laurus nobilis.* It is cultivated sometimes in this country, and we are familiar with the leaves, which are often used in packing fig drums.

Breakfast Cake.

Mrs. Bennett, Ripley Co., Ind., recommends: "2½ cups flour, 3 well beaten eggs, 1 teaspoonful salt, and sweet milk enough to make a stiff batter. Add the eggs last. Put in a hot, greased pan, and bake until brown."

Cheap Cup Cake.

Contributed to the *Agriculturist* by some one whose name is not on the recipe. "Take 3 cups of flour, 2 cups of sugar, 1 cup of butter, 4 eggs, ½ cup of sweet milk, ½ teaspoonful of soda, and 1 teaspoonful of cream of tartar; flavor to the taste."

Corn Meal Pudding.

By same as above: Take 1 quart of mush, and cool it with new sweet milk (not quite as much milk as mush), 5 eggs, ½ teacupful of sugar, 1 teacupful of flour, a little salt and soda or quick yeast, and ground cinnamon if liked. Bake 1 hour in a moderately slow oven, and eat with sauce. Some prefer to use no sugar in the pudding itself, but to eat with butter, sugar and nutmeg mixed.

Indian Meal Pies, Contributed to the *Agriculturist*, by Mary Williams, Linn Co., Iowa: Stir a small teacupful of very *fine* ground Indian meal into 2 quarts of boiling milk. When nearly cool, add 5 beaten eggs, and sweeten to taste, like a custard, adding spice and orange peel, if desired. Bake with a crust, the same as custard pies.

A DISTURBED NAP—FROM A PAINTING BY J. L. HAMON.

Engraved for the American Agriculturist.

The Editor with his Young Readers.

The above picture is not presented to our young readers as an example for them to follow, but simply as a sketch of real life. Tired of his toys, the active little fellow is wide awake for some excitement. How quietly he slipped his shoes off and moved about the room, and by taking thought, and a foot stool, succeeded, after a fashion, in adding a cubit or less to his stature, and thus the mischievous elf found at last an outlet for his pent up fun. He has weighed well the half-in-jest scolding he will get and come to the conclusion that the fun is worth all it will cost. Well, we sympathize with the little fellow, and though confessing it is not the pleasantest thing in the world to be waked up out of a pleasant nap in such a way, would forgive the child more easily than some naughty blue-bottle fly that might do very much the same thing. *Genuine* fun, even that which might be called mischief, *if* free from any willingness to really trouble others, shows the working of a bright active mind. The element of fun in the disposition is an admirable trait, and we would by all means treat indulgently errors having their source in good natured frolics. True, the respect due to age and to parents is not always a sufficient check, and sufficient regard is not had for the times and seasons when a frolic is most desirable; but such familiarity is far better than the shrinking awe with which many children regard grown people. Children should enjoy their parents' society more than any other; and he who can appreciate the fun and frolic of his child, lives his own life over again. The warm, pleasant Spring days are here, and the children are now no longer housed with their rocking horses, dolls, and wooden warriors, but are abroad, with nimble feet climbing the banks and walls in search of flowers and health, discovering beetles, bugs, and birds' nests, and leaving us to discover the tears in their clothes, and the many black and blue spots from unremembered blows and buffets, received in their tussles with the bushes and the rocks. It is all good for them, and a hard knock now and then will do little harm, while mamma's afternoon nap will be far less frequently disturbed.

Letter from a "Pretty Old Boy."

MR. EDITOR:—I suppose you are much younger than I am, so far as years are concerned, for I judge that you are in the prime of life as they once called me; while I have got far beyond that. The old adage is: "Once a man and twice a child;" but I have been three times a child—once when from five to twenty; once when from fifty-five to sixty I began to play with my grand-children, and now at eighty two I am playing with my great-grand-children. I feel very much like a child, and good times I do have with my loving great-grand-children up here in New-Hampshire, for they love me, and I love them, and we play and talk a great deal together, and they read to me all in the boys and girls' department of the *Agriculturist*, and I tell them all about my long journey through life thus far, and try to teach them many useful things, too. You are younger than I, yet you can teach me a great deal along with your *other* boys. When I was first a boy, and then a young man, there were not any papers for the young people, and there were few schools, and fewer books, and so I could not learn much. Well, what I am trying to get at, is this. The other day I was telling our young group something about what you call "chemistry," that is, about the wonderful way the Creator has put things together—the stones, the soils, the plants, the water, the air, and even our bodies. But I got bewildered myself, and now I want to ask you to tell us boys, and the girls too, something about chemistry. We could read about it in books, but we prefer to have you to talk it to us in your plain, easy way. You will thus oblige some grown up people, and the young boys and girls, and especially— A PRETTY OLD BOY.

What think you of that, young friends?—one who has seen *eighty two* Summers and Winters, eighty two Springs and Autumns, and yet considers himself a *boy*, and is desirous to still learn something of the wonderful works of God as displayed in the curious mechanism or composition of the things around us. Pretty soon, though for the sake of that group he gathers around him we hope it will be many years hence, yet pretty soon he will be transferred to a state where he will know far more of God's works than the wisest of us can conceive of here. When we think of his long experience and what he has seen and learned of the ways of men, we would gladly sit at his feet and gather lessons of wisdom such as only age can teach. Still we will adopt his suggestion, and in the best way we can try to tell you

Something about Chemistry.

First, let us collect a few things as examples. Here is an iron nail; here is a leaden bullet; here is a slip of zinc; and here, each by itself, is a bit of copper, some quicksilver in a vial, and a lump of charcoal. Let us begin with the iron. We hammer it, cut it, heat it, file it into the smallest dust, and it is only iron. Each finest particle is still a perfect piece of iron. We can make nothing of it but iron, *unless we add something to it.* Nobody has yet been able to make anything of iron but iron, without adding something else. We say, then, that it is a *simple body—an elementary body*—it has but one element or one kind of particles or atoms in it; and these atoms are all iron and only iron. If we take the lead, the zinc, the quicksilver (mercury), and the charcoal, and treat them in the same way, the result will be the same. In one we can only find lead, and nothing else; in the next only zinc atoms; in the next only copper atoms; in the next only quicksilver atoms, and in the charcoal (carbon) only atoms of charcoal. These then we call simple bodies or *elements*—things that can not be separated into two or more other things. It may surprise you to learn, that there are only about sixty of these simple or elementary bodies in all the world!—Now take a little piece of dry wood, a match will do, light the end and let it burn under a cold glass tumbler turned over it. See! The wood turns black and soon we have only a bit of charcoal left. But on the inside of the tumbler we have a moist dew (water) collected. The fact is, what was formerly wood has now been changed into charcoal and water, with besides a little of another substance that has escaped in the air unseen, just as the water would have gone off had it not been caught and condensed by the glass. Our wood then is a *compound* substance, made up of at least two other substances, charcoal and water, both of which are unlike wood: wood then is *not* a simple, elementary substance. The chemist can go further; he can take the water and separate it into two other substances neither of which is at all like water, out he can not do the same with the charcoal, for that is one of the simple elements out of which other things are made.—Almost all the things we see about us are compound bodies, made up of two or three, or more, other substances, just as cake is made up of flour, milk sugar, butter, eggs, salt, etc., though any body who did not know how it was made would never dream that there were so many things in a bit of cake. *Chemistry* tells us some very curious things about the simple or elementary substances, and the way the elements are put together to make different *compound* substances. It tells us how compound bodies can be taken to pieces, and their elements be put together to make other very different compounds. It tells us how only fifteen or twenty simple or elementary substances are curiously put together to produce nearly all the things we daily see around us. It teaches us many lessons very useful in our every day life. We shall find that we are really practising chemistry con-

Shadows on the Wall.

Last month (p. 120) we gave two Shadow Pictures to be made with the hands, and have others prepared of the same kind; but we lay them by to another time, to make room here for a very fine card-board picture, the original of which was sent to the *Agriculturist* by Mr. J. Fill, Principal of Bladensburg Academy, Md. Mr. F. will see that we have improved somewhat upon his pattern.—This is easily used, and we make it of the full size for marking out. Lay over this picture a thin piece of paper, and with a pencil trace the outlines, including the eyes, etc. With the pattern thus obtained, mark out the picture upon a thick piece of card-board, or pasteboard, or any paper thick enough to let no light pass through it; the cover of a ribbon or other box will be just the thing. It will improve your taste to transfer the picture by the eye. Cut the holes squarely through the card-board with a sharp pointed knife. For light shading on the hair and chin or beard, make slits very narrow. You will improve your skill in studying light and shade, by puncturing the card with pin-holes on the forehead, beard, the side locks, etc. Hold the card-board squarely between a single strong light and a white wall, and the shadow will be very pretty. Vary the relative distance between the light, the card, and the wall, to produce the clearest picture. Different kinds of light will somewhat vary the appearance of the shadows.

stantly, and that our comfort depends much upon chemical operations, and that by just so much as we learn to practice chemistry, by so much will we promote our comfort. Chemistry is intensely interesting, as well as useful. The world looks a very different world to one who has learned to look into the way its thousands of objects are made up. It is not a difficult study when rightly taken hold of. There are a few letters of the chemical alphabet to be learned before you can read the science, and practice it. Until our next lesson, please remember the first two letters, viz.: *A.* A simple body, called an *element*, one which can not be separated into two other substances. *B.* A compound body is one which can be divided into two or more different substances.

SCENE OF THE BATTLE GROUND OF PITTSBURG, OR SHILOH, TENN, APRIL 6th and 7th, 1862.

We again throw over some pictures, puzzles, and stories, to make room for Maps of localities of intense interest and importance at the present time. (See pages 156 and 157). Study them well. We hope soon to have no more special occasion for these now very useful maps.

The Mississippi River—Distances.

As we now write, many eyes and hearts are turned towards the Mississippi River and Valley. Few of our younger readers have any idea of the real magnitude of this great stream, which receives the water from about seven hundred million acres. We have had the pleasure of going both up and down on the Mississippi, from St. Paul, Min., to New-Orleans, and we confess that all we had read in our geographies, and elsewhere, gave but a faint idea of its vastness. Think of a lake *from one to two miles wide*, often more, and a thousand miles long, and you have some idea of the Mississippi between Cairo and New-Orleans. The river is exceedingly crooked, now running this way and now that; sometimes you are going down stream, though sailing directly north. In a few places the channel bends round so that, after running 10 to 30 miles, it comes back to within two or three miles of itself. So crooked is the course of the river that, though it is only about 475 miles in a direct line from Cairo to New-Orleans, yet the distance by the river is 1040 miles. There are many islands in the river, and for convenience these are numbered, beginning with No. 1 for the first island below Cairo at the mouth of the Ohio river, and so on down to the Island No. 10, and to Island No. 150, near New-Orleans. But we have only room now for the following table of distances, which will be useful while we are watching the course of the armies. The following distances in miles are by the river channel:

	From Place to Place.	From Cairo.	From New-Orleans.
St. Paul		986	2026
Red Wing	37	949	1989
La Crosse	149	800	1840
Prairie du Chien	96	704	1744
Dubuque	80	624	1664
Rock Island	109	515	1555
Davenport			
Muscatine	35	480	1520
Burlington	60	420	1460
Quincy	89	331	1371
Alton	196	135	1235
Missouri r.	8	192	1262
St. Louis	17	178	1215
Caroudolet	7	168	1203
St. Genevieve	57	111	1151
Cape Girardeau	71	40	1080
CAIRO	40		1040
Columbus	16	16	1024
Hickman	15	31	1009
Island No. 10	25	56	984
New Madrid	9	65	975
Osceola	87	152	888
Ft. Pillow about	15	167	873
Randolph	8	175	865
MEMPHIS	67	242	798
Peyton	58	300	740
Helena	25	325	715
Yazoo Pass	11	336	704
Concordia	63	399	641
White River	3	402	638
Arkansas r.	18	420	620
Napoleon		420	620
Columbia	65	485	555
Princeton	45	530	510
L. Providence	29	559	481
Vicksburg	78	632	408
Grand Gulf	55	687	353
NATCHEZ	52	739	301
Fort Adams	54	793	247
Red River	18	806	234
Bayou Sara	63	869	171
Baton Rouge	33	902	138
Plaquemine	28	925	115
Donaldsonville	35	960	80
NEW-ORLEANS	80	1040	
Mouth of Miss.r.	100	1140	100

THE MISSISSIPPI,

FROM NEW-MADRID TO MEMPHIS.

The above is a section of the Mississippi river, from New Madrid to Memphis (177 miles), where Com. Foote and Gen. Pope are acting—*now* at Fort Pillow (Wright?)

Market Review, Prices, etc.

AMERICAN AGRICULTURIST OFFICE,
New-York, Monday Morning, April 21, 1862.

1. TRANSACTIONS AT THE NEW-YORK MARKETS.

RECEIPTS.	*Flour.*	*Wheat.*	*Corn.*	*Rye.*	*Barley.*	*Oats.*
26 days *this* m'th	248,650	107,370	263,900	49,650	116,000	143,000
24 days *last* m'th	304,000	163,000	269,000	119,000	164,900	171,000

SALES.	*Flour.*	*Wheat.*	*Corn.*	*Rye.*	*Barley.*
26 days *this* month	305,800	389,000	1,367,000	138,000	235,000
24 days *last* month,	311,000	279,000	1,061,000	143,950	265,000

2. COMPARISON WITH SAME DATE LAST YEAR.

RECEIPTS.	*Flour.*	*Wheat.*	*Corn.*	*Rye.*	*Barley.*	*Oats.*
26 days 1862	248,650	107,370	263,900	49,650	116,000	143,000
26 days 1861	290,500	331,500	385,000	6,900	120,000	146,000

SALES.	*Flour.*	*Wheat.*	*Corn.*	*Rye.*	*Barley.*
26 days 1862	305,800	389,000	1,367,000	138,000	235,000
26 days 1861	467,000	2,479,000	1,660,000	39,000	96,000

3. *Reports from New-York, from Jan. 1 to April 16.*

	Flour.	*Wheat.*	*Corn.*	*Rye.*	*Barley.*	*Oats.*
1862	806,575	2,360,557	4,170,100	488,974	30	15,447
1861	607,646	8,483,393	2,419,500	5,127	1,000	24,535

CURRENT WHOLESALE PRICES.

	Mar. 19.	April 21.
FLOUR—Super to Extra State	$5 20 @ 5 70	$4 55 @ 5 10
Superfine Western	5 20 @ 5 35	4 50 @ 4 70
Extra Western	5 45 @ 6 80	4 80 @ 6 40
Fancy to Extra Genesee	5 90 @ 6 80	5 15 @ 6 40
Super. to Extra Southern	5 70 @ 7 50	4 80 @ 7 00
RYE FLOUR—Fine and Super.	3 00 @ 4 25	3 10 @ 4 25
CORN MEAL	2 90 @ 3 25	2 80 @ 3 15
WHEAT—Canada White	1 40 @ 1 50	1 35 @ 1 40
Western White	1 40 @ 1 55	1 35 @ 1 45
All kinds of Red	1 36 @ 1 45	1 10 @ 1 35
CORN—Yellow	58 @ 60	57 @ 58
White	60 @ 68	60 @ 70
Mixed	58 @ 60	58 @ 59½
OATS—Western	38 @ 39	38 @ 39
State	39 @ 40	40 @ 40
RYE	80 @ 83	79 @ 82
BARLEY	80 @ 1 00	70 @ 1 00
HAY, in bales, per 100 lbs	75 @ 90	55 @ 70
COTTON—Middlings, per lb	26½@ 27¾	29½@ 30
RICE, per 100 lbs	6 50 @ 7 50	6 00 @ 7 25
HOPS, crop of 1861, per lb	12 @ 20	12 @ 18
FEATHERS, Live Geese, p. lb	34 @ 38	34 @ 38
SEED—Clover, per lb	7¼@ 7¾	7¾@ 8¼
Timothy, per bushel	2 12½@ 2 37½	1 75 @ 2 00
SUGAR—Brown, per lb	6 @ 8¼	6 @ 8¼
MOLASSES, New-Orleans, p.gl.	40 @ 45	40 @ 45
COFFEE, Rio, per lb	19¼@ 22	18 @ 21½
TOBACCO—Kentucky, &c, p.lb	8 @ 20	7½@ 18
Seed Leaf, per lb	7 @ 25	7 @ 25
WOOL—Domestic fleece, p. lb	38 @ 52	38 @ 53
Domestic, pulled, per lb	32 @ 45	32 @ 45
TALLOW, per lb	8¾@ 9	8¾@ 8¾
OIL CAKE, per ton	36 00 @39 00	34 00 @37 50
PORK—Mess, per bbl	13 75 @	12 25 @12 50
Prime, per bbl	10 75 @10 87	10 00 @10 25
BEEF—Plain mess	12 00 @13 00	12 00 @12 37½
LARD, in bbls., per lb	7¾@ 8¼	7¾@ 8¼
BUTTER—Western, per lb	10 @ 15	9 @ 14
State, per lb	16 @ 21	16 @ 20
CHEESE	6 @ 8½	6½@ 9
Broom Corn—per lb	4 @ 6	4 @ 6
EGGS—Fresh, per dozen	15 @ 16	12 @ 13
POULTRY—Fowls, per lb	9 @ 10½	12 @ 14
Ducks, per lb	9 @ 14	16 @ 17
Turkeys, per lb	9 @ 14	10 @ 15
Dried Apples, per lb	6½@ 7	6 @ 6½
Dried Peaches, per lb., peeled	18 @ 20	18 @ 20
Dried Raspberries, per lb	13 @ 14	13 @ 14
POTATOES—Mercers, p. bbl	2 00 @ 2 25	2 50 @ 2 62
Peachblows, per bbl	1 88 @ 2 00	2 00 @ 2 12
Nova Scotias—per bush	62 @ 65	55 @ 60
Sweet Delaware, per bbl	3 50 @	3 00 @ 3 50
ONIONS—Red, per bbl	2 00 @	1 62 @ 1 75
White, per bbl	2 25 @ 3 00	2 00 @ 2 50
TURNIPS—Rutabaga, per bbl	1 00 @	1 00 @
APPLES—Common, per bbl	3 00 @	@ 3 00
Apples—good, per bbl	3 75 @ 4 50	3 50 @ 4 00

The course of the Breadstuff Markets, during a few weeks past has, utterly set at naught the calculations of the best informed statisticians and dealers. With the *known* large deficiency in Europe, to be made up before harvest, prices have continued to decline, almost daily. The only explanations to be given, are: 1st. The great falling off in our importations of European manufactures, (over $100,000,000 in a year past) has reduced the means of foreign operatives so much, that they are now consuming vastly less of wheat, and flour, and eating more of cheaper, coarser food. Since Jan. 1st, they have taken **4,170,100** bushels of our *Corn*, against only **2,419,500** bushels during the same period last year. —2d. The heavy dealers, here and abroad, in expectation of a large advance, purchased more stock than they could easily carry, and a slight decline seriously embarrassed some of them, and forced them to sell. This disturbed the trade, and compelled other holders to realize, and the market has thus been greatly depressed and unsettled.—3d. The excellent weather abroad has led to the putting in of large crops of Spring wheat, which has acted somewhat upon the fears of dealers, though this new sowing can not come in to meet any immediate demand.—4th. The farmers of Great Britain, and in Europe generally, have improved the favorable weather of the Winter, to thresh and market most of their grain—a much greater proportion than usual. This, while supplying the immediate wants, will leave much less for the demand during the next three or four months. But every indication is, that there will, on the opening of inland navigation, be a new impulse to the Breadstuff trade, and a material and immediate advance from present low rates. Indeed, the upward movement appears to have already begun, there being a rise of 5 to 15 cents per barrel in flour, within two days.....Cotton was dull and heavy early in the month, but has been in good request during the past week, and closes buoyantly, at 28c.@29c. ₱ lb. for Middlings .... A very brisk export trade was transacted in Provisions until within a few days; recent unfavorable advices have checked the foreign demand, the market closes heavily for hog products, though steadily for other articles .... Hay, Hemp, Hops, Rice, Seed (except Clover) and Tobacco have been in limited request at irregular prices. Clover Seed was dull of sale, at low figures, a few weeks ago, but recently the demand has been unexpectedly large, while the receipts have been small, and the temporary scarcity rapidly carried prices up fully $1 per bushel (60 lbs.). The market is apparently more quiet just now, and rates are a little below the highest point recently obtained.... The private sales of Wool were very moderate at former figures. An important auction sale occurred in Boston, on April 10th, when about 600,000 lbs. of fine Ohio and Pennsylvania fleece Wool were sold. The attendance was large, all the leading manufacturers in New-England having been represented and the entire lot was rapidly disposed of, at, on the whole, satisfactory prices. Large lots of extra and double Ohio and Pennsylvania sold for 44c.@46c.; extra Ohio sold at 43c., and a lot, very light, at 46c; double extra Ohio, very light, for 46c.@48c.; Ohio picklock, 49c.@50c.; a small lot choice Pennsylvania picklock, 51c. Washington County fleece, 44½c.@46c., and one double extra at 47½c. per lb.... The changes in the values of other Agricultural Products are shown in the table of Current Wholesale Prices.

N. Y. Live Stock Markets.—THE CATTLE MARKETS have been freely supplied, the past month, the average receipts being 3,574 per week, which has about equalled the demand during the Lenten season. Prices this week are ½c. higher than our last quotations, or 9c.@9¼c. per lb., estimated dressed weight, for prime; 8c.@8¼c. for fair to good; and 7c.@7½c. for poor, with an average of 8c@8¼c. for all sold. None left over at any market during the month.

Veal Calves.—Receipts for the past 4 weeks number 750 per week, which is a large increase from last month. At the last market day (April 15.) with 991 on sale, prices were very low, the best selling at 5c.@5½c. per lb., live weight, and fair veals at 4½c. Many poor ones sold at 3c. and under, not counting the week-old "bobs," which went in lots at 88c.@$1.25 per head.

Sheep and Lambs.—Receipts have only averaged 4,807 per week for the past month, which is less than any previous month for more than a year past. They are now scarce but with an abundance of veal, eggs and fish, prices are lower than last month, though they have ruled high until the last market day, when with over 6,000 on sale, the prices were equivalent to 3½c.@4c. per lb., live weight for clipped sheep, and 5c.@5½c. for unsheared sheep. A few lots of early spring lambs have been sold at $4½@$5 each.

Live Hogs.—Receipts are falling off, the average being 11,620 per week during the past month, which has been ample for the season. Prices have advanced ½c. Prime, heavy, corn fed hogs are selling at 4½c.@4¾c., live weight; poor light corn and heavy still fed hogs, 3¾c.@4¼c. There is a surplus of thin hogs, which sell very slowly.

The Weather.—The Spring has been cold and backward; snow is hardly yet gone from the north sides of the barns and fences, and as far south as this, we had a heavy snow storm as late as April 9. Spring work has consequently been kept back much beyond the average time. The winter grains have not suffered however, and the fruit buds not having come forward to be killed by frost, a large yield of all kinds of fruit is now hoped for. We append notes crowded out last month. OUR DAILY NOTES, condensed, read: *February* 24, rain, high wind with snowfall on 27—*March* 1, 2, clear, fine—3, heavy rain, high wind, barometer 29°20'—4, 1 inch snow—5,6,7, 8,9, fine, mild—10, light rain—11, 12, clear and pleasant—13, light rain—14, heavy rain P.M.—15, rain and snow—16, clear—17, 18, 19, clear, fine—20, rain—21, rainy—22, 23, light snow—24, to 30, clear, fine, spring-like but chilly, with thunder storm on 30th—31, rain——*April* 1, fine, mild —2, light rain—3, 4, pleasant—5, rain—6, 7, pleasant—8, 1½ inch snow at night—9, heavy snow, 4 inches—10 to 16, mainly clear and growing spring like—17, 18, clear and very warm for the date, almost hot; the ground getting dry, and field work going on briskly.

Rain Fall.—The rain and melted snow from Feb. 15th, to March 15th, amounted to 5.27 inches. From March 15th, to April 15th, only 2.79 inches.——The following table prepared at Washington Hights near this city, by Mr. Morris, who keeps the register for the Smithsonian Institute, is quite interesting. It shows the quantity of rain, which has fallen during the past seven years.

Years.	Winter. inches.	Spring. inches.	Summer. inches.	Autumn. inches.	Total inches.
1854–5	12.12	10.09	13.89	11.88	47.98
1855–6	11.50	9.58	13.10	8;73	42.91
1856–7	11.13	18.09	15.46	7.23	51.91
1857–8	13.52	12.30	13.89	12.88	52.59
1858–9	16.23	14.88	13.48	11.57	56.16
1859 60	10.22	9.75	8.61	17.36	45.94
1860 61	11.31	17.43	11.65	15.58	55.97
Mean	12.29	13.16	12.87	12.18	50.50

Advertisements.

Advertisements to be sure of insertion must be received at latest by the 15th of the preceding month.

TERMS—(invariably cash before insertion):

FOR THE ENGLISH EDITION ONLY.

Fifty cents per line of *space* for each insertion.
One whole column (145 lines), or more, $60 per column.

THE UNDERSIGNED, A YOUNG MAN, would like to spend the Summer upon a New-Jersey farm.
A. B. PALMER, Geneva, N. Y.

ITALIAN BEES.

Pure Italian Queens, of brilliant color, forwarded by express to any part of the U. S. Price $5 cash, to accompany the order.
No dark colored queens sent out from our Apiary.
BAKER & TAYLOR, Hulmeville, Bucks Co., Pa.

ITALIAN BEES.

FROM THE ORIGINAL IMPORTED STOCK.
For sale by S. B. PARSONS, Flushing, N. Y

BOARDMAN, GRAY & CO., PIANOS,

THE BEST AND MOST DURABLE.

Our large, elegant, and superior Pianos of 7 and 7¼ octaves at low prices for cash.

PIANOS FOR SMALL PARLORS,

6¼ and 6 octaves, elegant and durable. All our Pianos have the INSULATED IRON RIM, giving strength and durability, and requiring less than half the usual amount of tuning.

ROSEWOOD YOUNG AMERICA PIANOS, $150.

Warranted to prove good and give perfect satisfaction, or no sale.
SEND FOR DESCRIPTIVE CATALOGUES.
BOARDMAN, GRAY & CO.,
MANUFACTURERS, ALBANY, N. Y.

BOOKS FOR FARMERS AND OTHERS.

[Any of the following books can be obtained at the office of the *Agriculturist* at the prices named, or they will be forwarded by mail, *post paid*, on receipt of the price. Other books not named in the list will be procured and sent to subscribers when desired, if the price be forwarded. All of these books may well be procured by any one making up a library. Those we esteem specially valuable, are marked with a *.]

American Bird Fancier	$0 25
American Weeds and Useful Plants*	1 50
American Farmer's Encyclopedia	4 00
Allen on the Culture of the Grape	1 00
Allen's (R. L.) American Farm Book*	1 00
Allen's Diseases of Domestic Animals	75
Allen's (L. F.) Rural Architecture	1 25
American Florist's Guide	75
Barry's Fruit Garden*	1 25
Bement's (C. N.) Rabbit Fancier	25
Bement's Poulterer's Companion *	1 25
Boussingault's (J. B.) Rural Economy	1 25
Bridgeman's Young Gardener's Assistant*	1 50
Bridgeman's Kitchen Garden Instructor	60
Bridgeman's Florist's Guide	60
Bridgeman's Fruit Cultivator's Manual	60
Brandt's Age of Horses*	50
Buist's American Flower Garden Directory	1 25
Buist's Family Kitchen Gardener*	75
Central Park Guide*	25
Chorlton's Grape-Grower's Guide*	60
Cole's (S. W.) American Fruit Book	50
Dadd's (Geo. H.) Modern Horse Doctor*	1 00
Dadd's (Geo. H.) American Cattle Doctor	1 00
Dana's Muck Manual for Farmers	1 00
Downing's Fruits and Fruit Trees of America**	1 75
Downing's Ladies Flower Garden	1 25
Eastwood on the Cranberry*	50
Every Lady her own Flower Gardener	50
Farm Record, for 25 years	3 00
Farmer's Practical Horse Farrier	6
French's Farm Drainage *	1 00
Fessenden's American Kitchen Gardener	25
Field's (Thomas W.) Pear Culture	1 00
Fish Culture*	1 00
Flint (Charles L.) on Grasses*	1 25
Goodale's Principles of Breeding	75
Guenon on Milch Cows	60
Hall's (Miss) American Cookery	1 00
Herbert's Hints to Horsekeeper**	1 25
Jenning's Horse and his Diseases	1 25
Johnson on Manures	75
Kidder's Bee Culture	50
Langstroth on the Honey Bee*	1 25
Leuchars' Hothouses	1 25
Liebig's Lectures on Chemistry	50
Linsley's (D. C.) Morgan Horses	1 00
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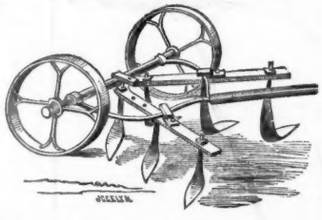

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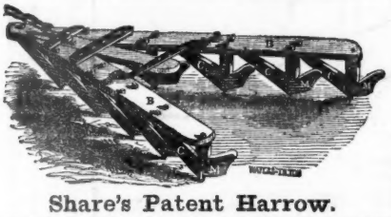

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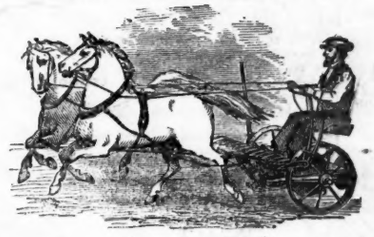

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Sedgebeer's Conical French Burr Mills, price $120.

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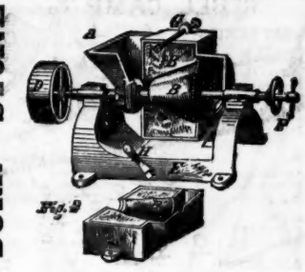

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These machines took TEN FIRST PREMIUMS at WESTERN STATE FAIRS last year, and are justly considered superior to all others. The grinding surfaces of the Mill are BURR STONE, of conical form, so adjusted, that the finest flour or meal, and the coarsest feed may be ground with the same MILL. Any person can operate and keep the mill in perfect grinding order without expense, and it

WILL LAST A LIFE TIME.

Driven by Horse Power our smallest Mill (No. 1) will grind from 8 to 15 bushels of feed the hour; if run by Water or Steam power, 12 to 20 bushels. Price of No. 1 MILL FOR FARM USE, $100. Nos. 2 and 3, Mills for Millers' use, $140 and $170. The undersigned also make a Wire Bolt for No. 1 Mill, with which Farmers living at a distance from milling establishments are enabled to make their own flour. Price $50 extra.

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GENTS.:—The two mills I purchased are giving perfect satisfaction. I had an experienced miller to test the wheat-mill; the flour is as good, and bakes even better than that we get at the best custom mills.

The No. 1 Feed Mill does its work as well as any flat stone mill could do it, grinds as large a quantity in a given time, and does it with *less than one-half the power* required to run a flat stone mill. N. H. HOCHSTETLER.

GERMAN TOWNSHIP, O., March 13th, 1862.

This is to certify that I have been employed by Mr. N. H. Hochstetler to test the Conical Burr Stone Flouring Mill, bought of Bennet Bros., of New-York, and so far as I have tried it, it makes as good flour as any other mill.

DAVID LAUTENSCHLEGER, Miller

PHILADELPHIA, PA., July 11, 1861.

MESSRS. BENNET BROS.:—The No. 2 Mill, driven by a five inch Belt is grinding 30 bushels of Corn per hour. It has proved itself to be what its name purports, "Excelsior."

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THE HORSE-POWER,

FOR DRIVING THRESHING MACHINES, FARM MILLS, HAY CUTTERS, COTTON GINS, CIRCULAR SAWS, MOULDING AND PLANING MACHINES, LATHES, ETC.,

Has proved itself to be the best ever invented. The friction is reduced by IRON BALLS, so arranged in all the bearings, that the whole weight of the castings runs upon them. THREE POUNDS DRAUGHT, at the end of a ten feet lever, will keep the power in motion! thus permitting the ENTIRE STRENGTH of the horses to be used on the machine to be driven. ONE HORSE will do as much work on this power, as TWO on the endless Chain Power. IT IS PORTABLE, and may be used IN THE FIELD as well as in the house. More than TWENTY FIVE PER CENT of horse flesh is saved over ANY OTHER POWER IN USE. It is simple in construction, and not liable to get out of order. THE $125 POWER WILL DRIVE ANY THRESHING MACHINE.

Price of Power for 1 to 4 horses.....$125
Price of Power for 1 to 8 horses..... 175

All Goods GUARANTEED, PACKED, and DELIVERED at depot or wharf at above prices.

GENTS.:—With two horses on your Anti-friction Power, we drive your No. 1 Mill, grinding 15 *bushels of corn per hour*, and cut a large quantity of hay at the same time. I have never seen a power that runs with so little friction, and consequently with so little strain upon the horses.

W. P. COOPER, Supt. 19th & 15th St. Pass. R. R. Co., Philadelphia, Pa.

CHATHAM, N. J., Jan., 15, 1862.

BENNET BROS.:—I drive my Thresher with two horses, and can do as much work, with as little labor for the horses, as my neighbors can with the same Thresher and four horses. I think one horse will do as much work with the "Anti-friction Power" as can be done with two horses on the Powers used in this neighborhood. Respectfully yours,

EBN. F. CONDIT.

We have completed an arrangement with the Western Transportation Co., by which they agree to deliver our Mills and Powers at PORTS ON LAKE ERIE AT 25 CTS. PER 100 lbs. MILWAUKEE, CHICAGO, AND INTERMEDIATE PORTS AT 20C. SHEBOYGAN AND GREEN BAY AT 35C., and to TWO RIVERS, MANITOWOC, AND PORT WASHINGTON, WIS., AT 40C. PER 100 lbs.

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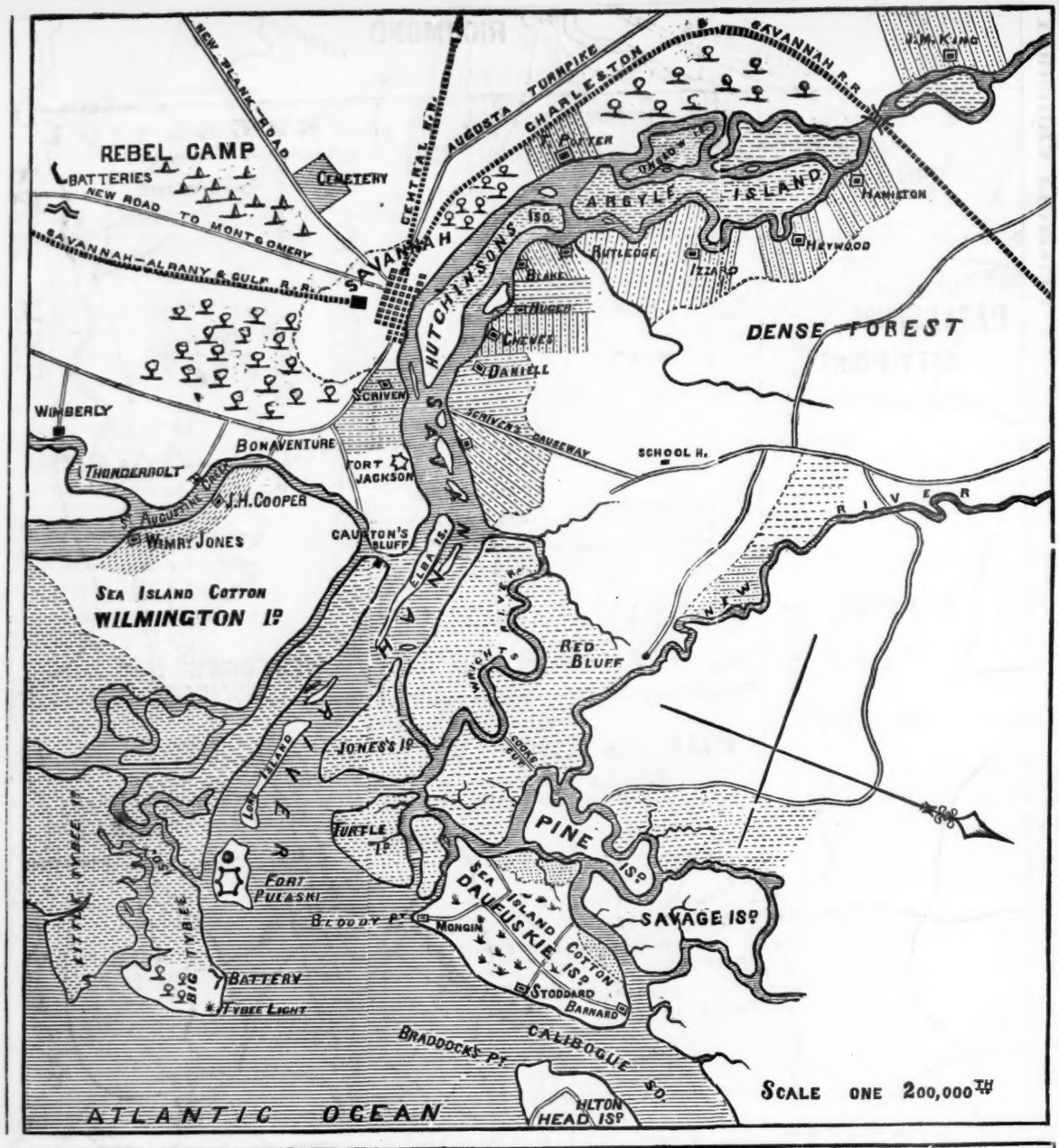

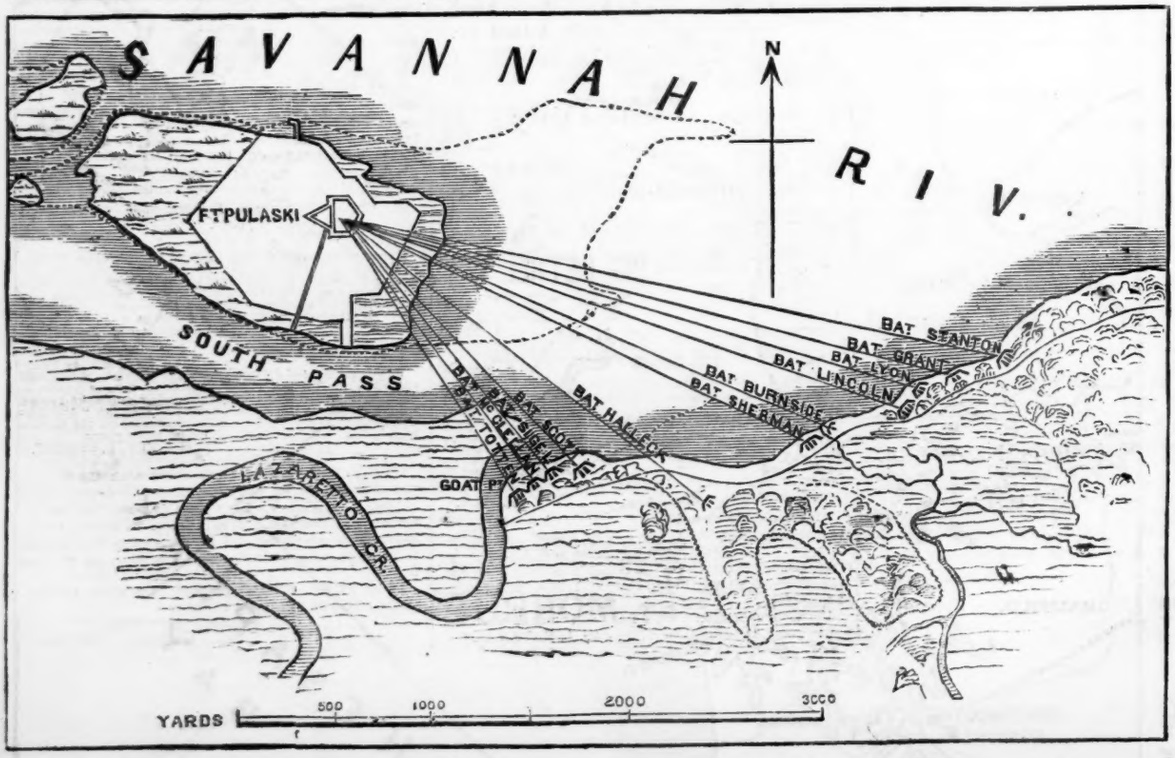

The two Maps on this page have a peculiar interest just now. The first shows **Savannah, Geo.**, and its surroundings, including Fort Pulaski which has just fallen. Without doubt the forces under General Hunter and Commodore Dupont are now moving towards Savannah.——The second map shows the plan of attack upon **Fort Pulaski,** which capitulated on *April* 11th. The 11 batteries represented, contained only 34 cannons and mortars, all told. The Fort mounted 47 cannons. This Fort is one of the strongest built in the country, and the fact that its walls were battered down by the recently improved cannons, fired at from one to two miles distance, will revolutionize the whole system of fortifications, throughout the word. The little "Monitor" and the "Merrimac" have destroyed faith in wooden ships. The results of this siege show that iron cased forts, as well as iron plated ships. will hereafter become necessary. Weare indeed *making history* in our day

YORKTOWN PENINSULA.—A most important locality is represented in this map. Comparatively few are the families in all our country who have not now a son, brother, father, relative, or at least a friend either in the Valley of the Mississippi, or in the region represented by our map. At Yorktown alone there are now probably over *two hundred thousand* armed men, including both sides. Richmond lies nearly *northwest* of Yorktown, and is distant about 55 miles. (The map is on a scale of about 5¼ miles to the inch.) Yorktown will be twice memorable in the history of the country. It was the scene of the last great battle of the Revolutionary War (1781.) Whether the final contest of the present war will be there, remains to be seen. That there will soon be a great battle at or near Yorktown, is beyond doubt. We give this map as the locality of one of the great centers of interest, and likely to continue such. The index in the lower corner is a guide to the points of the compass.

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Imported Chinese Sugar Cane	per qt. 50c.	per bush.	$10
American do.	do. 25c.	do.	4
Fine Early Mohawk Bush Beans	do. 20c.	do.	$4
Early Eight-rowed Sweet Sugar Corn	per qt. 20c.	per bush.	$4
Stowell's Evergreen Sweet Corn	do. 20c.	do.	$4
Scarlet Italian Clover		per lb.	50
Alsike Clover		do.	75
Lucerne do.		do.	25
Large Red Onion	per oz. 10c.	do.	75
Guernsey Parsnep	do. 10c.	do.	75
*Seven Year Pumpkin (very fine)	do. 30c.		
French Scarlet Turnip Radish	do. 10c.	do.	75
Improved Ruta Baga	do. 10c.	do.	75
*Pure Hubbard Squash	per oz. 20c.	per lb.	$1.25
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Extra Early Turnip or Bassano Beet	per oz. 10c.	per lb.	75
White Sugar Beet for Cattle	do. 5c.	do.	50
Long Red Mangel Wurtzel	do. 5c.	do.	50
*Extra Fine Large Drumhead Cabbage	do. 25c.	do.	$2
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*Thorburn's Nonpareil Cauliflower	per pkt. 10c.	per oz.	75
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(The above are the 2 finest varieties of lettuce in cultivation.)

*Hybrid White Japan Melon (early and fine)		per pkt.	25
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*Scarlet Chinese Winter do. (fine)		per oz.	20
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White French do. (finest Winter sort for stock or table use)		per oz. 10c.	per lb. 75

FLOWER SEEDS.

*10 Beautiful Varieties of Annuals			50c.
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*Beautiful Collections Phlox Drummondii (5 distinct sorts)			40
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	per oz.	per ¼ lb.
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do. White Belgian	10c.	40c.
Ruta Baga, Skirving's purple top	8c.	30c.
do. Laing's Improved	8c.	30c.
Sugar Beet, true	8c.	30c.
Chicoree, the great substitute for coffee	10c.	40c.
Onion, Large Red Wethersfield	10c.	40c.
do. Yellow Danvers	15c.	50c.

Those who wish for larger quantities, will be supplied at the lowest market price.

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Stone-Mason Cabbage Seed, warranted fresh and true, 25 cts. per ounce, 75 cts. 4 oz., $2.67 per lb., in every instance prepaid by me, and WARRANTED to reach each purchaser. Priced Catalogues of every variety of Garden Seeds gratis.
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IMPROVED
WEATHER INDICATOR.

While in this age of invention and progress, our American Farmers have seized with avidity almost every invention and implement of husbandry that Art or Science could bring to their aid, one of the most important auxiliaries—the Barometer—has been almost entirely overlooked. This has arisen partly from a want of knowledge of its value and importance, but principally because the peculiar delicacy of construction, and high cost of the instrument have made it unavailable to the masses. In this instrument these objections have been entirely obviated. While its simplicity of construction, and scientific arrangement, render it perfectly portable and accurate, its cost is so low as to place it within the means of all. Indicating with unerring certainty coming changes in the weather, it also affords a simple and accurate medium for measuring hights, while the accompanying Thermometer gives the temperature. The Scientific American, Profs. Williams, Carr, Holmes, Douglass, and a host of public journals and scientific men, recommend it as the *Agricultural Barometer, par excellence.* Profs. Henry, Hackley, Maury, Drs. Arnot and Dick, have computed that an annual saving of five per cent. on all crops, might be made by its use, thus affording an annual saving of over fifty million dollars to the farmers of the United States. It is simple, durable, accurate, perfectly portable, and very cheap; is nicely finished, and affords a very beautiful and ornamental piece of furniture, some of the carved cases being very elegant. We give below a brief description of it, from the accompanying cut, in which the cistern is seen divided to show its construction. The cistern, *A*, is of cast iron—cast with two compartments—partly filled with mercury. The tube *C*, filled with mercury, is sealed into the cistern, *A*, and being placed upright, the air is admitted by turning back the screw, *D*, which has a flat place filed in its side near the outer end, where air can pass through the outer wall, when the mercury takes its level, and it is in working condition. To make it portable, turn it upon its side, when the spare mercury runs from *B* to *A*, filling tube and cistern, *A*, full—turn in the screw, and it is shut into *A* perfectly solid, and may be thrown about with impunity, or carried by Railroad or Stage Express all over the world in safety.

We claim for this instrument that while it possesses ALL THE INTRINSIC MERIT of other Barometers, it has several peculiar advantages possessed by NO OTHER, while its construction is such as to avoid the objections to which all other instruments are more or less subject. Among its peculiar merits are:

1st. Its accuracy, being a Mercurial Cistern Barometer, and constructed on strictly scientific principles. It has stood the severest tests of a great number of scientific men, and is amply recommended by eminent scientific authorities who had previously discarded and condemned the Aneroid and other ordinary cheap Barometers. For evidence of this we refer to the U. S. Coast Survey, Smithsonian Institute, and other eminent scientific authorities whose certificates we have.

2d. Its cheapness. While possessing intrinsic merits possessed by none other, its price is lower than any other reliable Barometer.

3d. It is perfectly and entirely portable, and can be expressed by stage or railroad to any part of the country with out injury. THERE IS NO OTHER PERFECTLY PORTABLE BAROMETER.

4th. Its thorough construction and perfect simplicity makes it the most durable and perfect Barometer ever invented, and renders it impossible to injure or get it out of order, except by gross carelessness or design.

5th. It is unaffected by changes in temperature, which can be said of NO OTHER Barometer.

6th. Its beautiful finish and tasteful design render it a beautiful parlor or library ornament, while it affords a never failing study of interest to the man of leisure, cultivation and refinement, and a sure and reliable indication of the coming weather to all whose interests are affected by atmospheric changes.

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Have been awarded it by the New-York, Vermont, Michigan, and U. S. Agricultural Societies over all competitors.

☞ Agents wanted everywhere. Exclusive agencies given.

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Peterboro', New-Hampshire.

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CELEBRATED NOISELESS
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WHITE, BLACK, AND COLORED.

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Look to your Interest in the

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Get the BEST of everything that is required, and you will PROFIT in the end.

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" "O. K." SOAP,

are pure, wholesome, and useful articles, always of the same strength, and JUST weight: implicit confidence may be placed in all articles, bearing the name of **James Pyle, New-York,** for we intend that every article shall be as recommended on the label. Give us a trial; tell your grocer whose you want, and don't be persuaded that something else is just as good—simply because THEY buy lower, and make larger profits. JAMES PYLE, Manufacturer,
Corner Washington and Franklin-sts., New-York.

SOMETHING NEW.—Dr. Brown's Patent Baby Tending Machine. The greatest labor saving, health-preserving and pleasure-giving invention ever made; saves from $100 to $300 per year in any family where there is a baby; costing from $6 to $100. Call and see it. Send for our Circular, containing 20 engravings, illustrating all its shapes, giving prices, etc. Its motion is perfectly charming. Address Dr. J. SILAS BROWN, No. 546 Broadway, N.Y.

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KNICKERBOCKER
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A Slight Cold, Cough, *Hoarseness, or Sore Throat, which might be checked with a simple remedy, if neglected, often terminates seriously. Few are aware of the importance of stopping a Cough or Slight Cold in its first stage; that which in the beginning would yield to a mild remedy, if not attended to, soon attacks the lungs.*

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Public Speakers and Singers, *will find them effectual for clearing and strengthening the voice.*

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RHODES' SUPER-PHOSPHATE.
THE STANDARD MANURE.

Manufactured under the supervision of the eminent manufacturing and analytic chemists Robert B. Potts and Frederick Klett—the sulphuric acid being produced upon a large scale at the works, Camden, New-Jersey.

Guaranteed pure and free from all adulteration.

Dr. Evan Pugh, President Penn. Farm School, in his report upon artificial manures through the Country Gentleman, March 27, 1862, says:

"*Rhodes' is the cheapest American Superphosphate, and if Mr. Rhodes will sell under legal guarantee an article to contain 14 or 15 per cent of anhydrous Phosphoric Acid, in combinations soluble in water, (with ten minutes boiling,) his manure would deserve an unqualified recommendation as one of the very best Superphosphates manufactured any where in the world, and very much better than any manufactured in this country.*"

The following report of analyses of one thousand (1000) tuns Rhodes' manure, made by Dr. G. A. Liebig, shows even higher results than Dr. Pugh requires:

BALTIMORE, February 28, 1862.

MESSRS. B. M. RHODES & Co.,

Gents:—I have analysed the two samples of Rhodes' Manure, which were averaged from a lot of one thousand tuns at the works, and sent to me by Messrs. Potts & Klett. Sample No. 1 contains of phosphoric acid soluble in water 16.84 per cent., equal to 27.75 of bi-phosphate of lime. Sample No. 2 contains 16.44 per cent., which is equal to 27.10 of bi-phosphate of lime. Both of these samples come fully up to the standard qualities of your Superphosphate.

Very respectfully, G. A. LIEBIG, Ph. D.

Agriculturists and dealers apply to HENRY E. MORING, General Agents for New-York and New-England, 97 Pearl-st., near Hanover Square, New-York.

PROVIDENCE COMPANY'S CONCENTRATED BONE FERTILIZER.

This is the best Fertilizer, at the price, ever offered to the farmer.

It is composed of pure bone, ground fine, with other materials added to give it immediate effect.

It powerfully stimulates the plant from the moment the seed germinates until harvest.

It will not only fill the farmer's crib, but will enrich the soil. Try it.

It is packed in good flour barrels, and delivered to vessel or railroad, in New-York City, free of charge for cartage, at the following prices:

For one barrel, $2; two, $3 50; three, $5; four, $5 50; five, $8; six, $9 50; seven and over, $1 50 per barrel.

Two barrels will manure one acre of corn in the hill.

Send your orders, inclosing the cash, by mail, to
GRIFFING, BROTHER & CO.,
No. 60 Courtlandt-st., New-York,
Who are Sole Agents for the United States.

GENUINE

SUPER-PHOSPHATE OF LIME,

Manufactured from **Raw Bones,** dissolved in *Sulphuric Acid,* with a few important additions, *at $40 per tun,* by

A. LISTER & BROTHER, TARRYTOWN, N.Y.

(For results of the past season see *American Agriculturist,* for August, 1861, page 252.)

We guarantee every tun of our manufacture to be of uniform quality, and invite trials or chemical analysis.

We also manufacture from RAW, (OR UNBURNED), BONES, the fine, medium, and coarse ground **Bone Manure,** for lasting as well as immediate effect upon all kinds of farm crops. The coarse ground is particularly valuable for *Fruit Trees* and *Grape Vines,* which require a constant and lasting source of nourishment.

For sale in large and small quantities by
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Azotised Wool and Dried Blood Fertilizer Co.

This MANURE by analysis surpasses all others offered in this country, and is infinitely cheaper. Scale of prices graded for the benefit of farmers and cultivators. Send or call for a circular, and see samples.

Chemical analyses made—particular attention given to analyses of soils and plants, at rates available by all.

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150,000 BARRELS POUDRETTE.

Send your orders early, and you will be sure to get them filled. Address GRIFFING, BROTHER & CO.,
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Refer to Barril Brothers, 37 William-st., New-York,
Ex-Gov. John A. King, Jamaica, L. I.

No. 1 Peruvian Guano—Warranted Pure.

Sold at wholesale and retail, at the lowest market price.
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100,000 Barrels

OF THE

LODI MANUFACTURING COMPANY'S

POUDRETTE,

FOR SALE BY

JAMES T. FOSTER,

No. 66 Cortlandt-st., New-York.

The large facilities which they enjoy by exclusive contract for all the night soil of the City of New-York, and large capital invested in their extensive works, enable them to manufacture an article which is superior to any other fertilizer in market, taking *cost* and *yield* into consideration. It will be sold at the usual price of $1 50 per barrel for seven barrels or over, delivered free in New-York City.

Please take notice that the office and sale of this Company's Poudrette is changed from Messrs. Griffing, Brother & Co., No. 60 Cortlandt-st., to No. 66 CORTLANDT-ST.

Other brands of what purports to be Poudrette are in market, put up in barrels to resemble this. Beware of frauds—buy that only which has the brand of the Lodi Manufacturing Co. Any other article is comparatively worthless.

We call the attention to the following experiences of practical farmers, in different sections of the country:

NORTH PEMBROKE, Mass., Oct. 7, 1861.

James R. Dey, Esq., President of the Lodi Manufacturing Co.:

Dear Sir—The early autumnal frosts for several years past have seriously injured our corn crops, and rendered it necessary for farmers in this section to seek some fertilizer to give their crops an early start, in order to bring them to maturity in season to avoid that calamity. Having experimented with Guano, Superphospate of Lime, etc., with indifferent success, in the Spring of 1860 I purchased four barrels of the Lodi Manufacturing Co.'s Poudrette, which I applied principally to my corn crop, with the most satisfactory results. This was the first Poudrette ever introduced into this vicinity. Last Spring I procured from your branch office in Boston about thirty barrels, the most of which I sold to my neighbors, who had witnessed the effect of my last year's trial, which, so far as has been heard from, has given universal satisfaction. To further test the efficacy of your Poudrette, this season I ploughed about two acres of light, sandy soil, which had laid in grass about six years, (the last crop of grass being very light.) This I planted with corn and potatoes, applying about four and a half barrels of Poudrette, with no other manure, except a handful of ashes to each hill at the first hoeing, and from present appearances we shall have a better crop than on a field of like soil where we applied twenty-five loads of manure to the acre. Its effects on garden vegetables are equally apparent. I am, very respectfully, yours,
HORACE COLLAMORE.

MERRILL, Me., Oct. 11, 1861.

Lodi Manufacturing Co.:

Sirs—I bought of your agents, Cross & Newell, two barrels of your Poudrette, and in using the first, I got sick of it and sold the other barrel. But the one that I used I tried the principal part on potatoes. I used about half a plat to the hill, and the yield was equal to those planted on manure at the rate of twenty loads to the acre. My neighbor, who bought the other barrel, says if he had bought five barrels more, he would have saved the price of twenty barrels.
Yours, &c., V. B. PAUL.

WALDO, Me., Oct. 12, 1861.

To the Lodi Manufacturing Co.:

Gentlemen—Last Spring I bought of Cross and Newell one barrel of your Poudrette as an experiment, but with very little faith in its utility. I put it on six rows of corn in different parts of the field, after manuring with barn-yard manure, in the usual way—at the second time hoeing. Where I put the Poudrette the corn was twice as large as the rest of the field, and this now is one-third heavier, and has ripened about eight days earlier. I think it the very thing we want for raising corn in this country, and shall use it more extensively another year. Yours, &c.,
WELLINGTON SHOREY.

SMYRNA, Del., Oct. 1, 1861.

Gentlemen—I had heard of the Poudrette manufactured by the Lodi Manufacturing Co., and thought I would try a small quantity on a lot of land intended for corn, and as I could not get it nearer than Philadelphia, I went and bought of the agent twenty barrels, and applied two barrels to the acre, dropping the corn and a handful of Poudrette in each hill. I left out a part of two rows, and put no Poudrette, to ascertain if there was any value in it, and noticed those two rows during the season; and where the Poudrette was used, the corn was decidedly the best, and I have no hesitation in saying it is a good manure for corn. I am certain I made from one-third to one-half more by using it.
Yours, respectfully, JOHN G. BLACK.

CHESTER, Pa., Sept. 15, 1861.

To the Lodi Manufacturing Co.:

Gentlemen—I purchased this season of Messrs. Baker & Co., eleven barrels of Poudrette and one bag of Phuine, which I put on my corn. I marked the place where I put the Phuine, which, when started, seemed ahead, but now the corn where the Poudrette was on is much the best. Last year I used Allen & Needle's new Fertilizer, which did no good at all, as the corn done better without the manure. I think the Poudrette made by your Company the cheapest manure in use. Yours, &c.,
A. R. PERKINS.

The Company's pamphlet, containing directions for its use, with other valuable information and the experience of over one hundred farmers, will be sent free to any one applying for the same. Address,

JAMES T. FOSTER,
Care of Lodi Manufacturing Company,
66 Cortlandt-st. N. Y

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Subscriptions Still Date January 1st.

Unless otherwise specially ordered, all new subscriptions received before June 20, will be entered from January 1st, and the back Numbers be forwarded.

Strawberry Show

AT THE

OFFICE OF THE AGRICULTURIST,

41 PARK ROW (TIMES BUILDING,) NEW-YORK.

$50 IN PRIZES.

The Proprietor of the *Agriculturist* invites Strawberry Raisers, of this vicinity and elsewhere, to make an exhibition of their choice fruit on Friday and Saturday, June 20th and 21st,* in the spacious Office of the *American Agriculturist*; and to give zest to the exhibition, offers the following

PRIZES:

For the largest number of most approved varieties, (one quart each)	$10
Second prize	5
Third prize	3
For the best dish of market berries, (two quarts of one variety.—It will be very desirable to show plants with fruit, in addition)	5
For the best dish of the best berries for general cultivation. (two quarts one variety)	5
For second and third best	$3, $2
For the largest three berries of one variety, (weight and size both being considered)	3
For the best New Seedling	3
For the best quart of White Strawberries	2
For the best flavored Strawberries (one quart)	2
For the best quart Triomphe de Gand	1
For the best quart Wilson's Albany	1
For the best quart Hooker	1
For the best quart Hovey's Seedling	1
For the best quart Victoria	1
For the best quart Jenny Lind	1
For the best quart Vicomtesse Hericart de Thury	1

The berries to come in competition for the premiums must be upon the tables as early as 10 A. M. on Friday, June 20th,* and each specimen must be correctly labeled. The Awarding Committee will attend to their duties at 11 A. M.—at which hour the exhibition will open. When the premiums are awarded, the *names, places of residence* and of *business* of the exhibitors will be placed upon the specimens, and the prize samples designated.

The fruit will be subject to the order of the exhibitors at 4 P. M., Saturday, 21st.

* Should any peculiarity of the season require a change to be made in the date of holding the exhibition, notice will be given in the June *Agriculturist*.

An American Exhibition

OF

Pumpkins, Squashes, and Ornamental Gourds.

There will be a Public Exhibition of **Pumpkins, Squashes, and Ornamental Gourds,** at the office of the *American Agriculturist*, 41 Park Row, New York City, opening on Wednesday, Nov. 5th, 1862, at which the following prizes will be paid by the Publisher, upon the award of competent Committees.

CASH PREMIUMS.

I.	For the *Heaviest* Pumpkin or Squash	$20.00
II.	For the 2nd do. do.	10.00
III.	For the 3d do. do.	5.00
IV.	For the Best do. do. for cooking.	10.00
V.	For the 2nd Best do. do. do.	5.00
VI.	For the largest yield on a single Vine.*...	10.00
VII.	For the 2nd do. do. *.	5.00
VIII.	For the largest and finest collection of Fancy or Ornamental Gourds*.....	10.00
IX.	For the 2nd do. do. *....	5.00

* All to be grown by one person and to be accompanied by an affirmed statement from the grower, and two disinterested persons who assist in gathering.

Note 1.—The specimens receiving the Prizes will remain on Public Exhibition at the pleasure of the Publisher who offers the prizes. The other specimens will be subject to the order of the exhibitors, or be sold at Auction or otherwise disposed of, for their benefit.

Note 2.—All Exhibitors must notify us of their intentions by Oct. 10th, and deliver specimens for competition on or before Nov. 3d. Specimens to be delivered free of charge.

Premiums for Northern Grown Cotton.

One Hundred Dollars are offered for the best five specimens of cotton grown above latitudes 38° and 40°, this year. See particulars in February *Agriculturist*, page 64.

American Agriculturist in German.

The AMERICAN AGRICULTURIST is published in both the English and German Languages. Both Editions are of the same size, and contain, as nearly as possible, the same Articles and Illustrations. The German Edition is furnished at the same rates as the English, singly or in clubs. A club may be part English, and part German.

EXTRA PREMIUMS,

Only to May 10, 1862,

(And at no other time.)

STRAWBERRY PLANTS

Sent Free by Mail.

CONDITIONS:

I. To any person forwarding, now or before May 10th, ONE subscriber to the *American Agriculturist*, at $1 a-year, (*to begin Jan. 1st*, 1862,) we will present (if desired) **Ten Plants** of the **Triomphe de Gand Strawberry,** forwarded free. These plants set in good soil early this Spring, will multiply greatly the present season, and furnish plants enough to start a large plot in August, for fruiting next year.

II. To any person forwarding, after April 1, and before May 10, TWO subscribers to the *American Agriculturist*, at $1 each, (for the year 1862,) we will send (if desired) **Twenty-five Plants** of the **Triomphe de Gand Strawberry,** to be forwarded free as above.

III. To any person forwarding, now or before May 10th, THREE OR MORE subscribers for the present year, (from Jan. 1,) at $1 each, we will present, **for each name, Fifteen Plants** of the **Triomphe de Gand Strawberry,** to be forwarded free as above.—N. B. When three or more names are sent together, the recipient may order, if desired, one-fourth of the plants to be the BARTLETT STRAWBERRY, a new and very promising variety.

N. B.—Three days before sending out the above plants, a printed slip or circular will be mailed to each person entitled to receive them, notifying him of the day on which the plants will be mailed, so that they can be looked for on their arrival. The printed slip will also contain directions for treatment of plants, soil, culture, etc.

(For other particulars see last month.)

Bound Volumes—Binding—Covers.

We have complete sets of Vols. 16, 17, 18, 19, and 20, both unbound, and bound separately in neat covers with gilt lettered backs.

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Volumes 16, 17, 18, 19, and 20, *unbound*.....$1,00 each.
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